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west virginia department of environmental protection

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Office of Oil and Gas  
601 57<sup>th</sup> Street, S.E.  
Charleston, WV 25304  
(304) 926-0450  
fax: (304) 926-0452

Harold D. Ward, Cabinet Secretary  
[www.dep.wv.gov](http://www.dep.wv.gov)

Wednesday, November 17, 2021  
WELL WORK PERMIT  
Horizontal 6A / New Drill

TUG HILL OPERATING, LLC  
380 SOUTHPOINTE BOULEVARD, PLAZA II  
SUITE 200  
CANONSBURG, PA 15317

Re: Permit approval for BRECKENRIDGE S-22HU  
47-051-02401-00-00

This well work permit is evidence of permission granted to perform the specified well work at the location described on the attached pages and located on the attached plat, subject to the provisions of Chapter 22 of the West Virginia Code of 1931, as amended, and all rules and regulations promulgated thereunder, and to any additional specific conditions and provisions outlined in the pages attached hereto. Notification shall be given by the operator to the Oil and Gas Inspector at least 24 hours prior to the construction of roads, locations, and/or pits for any permitted work. In addition, the well operator shall notify the same inspector 24 hours before any actual well work is commenced and prior to running and cementing casing. Spills or emergency discharges must be promptly reported by the operator to 1-800-642-3074 and to the Oil and Gas Inspector.

Please be advised that form WR-35, Well Operators Report of Well Work is to be submitted to this office within 90 days of completion of permitted well work, as should form WR-34 Discharge Monitoring Report within 30 days of discharge of pits, if applicable. Failure to abide by all statutory and regulatory provisions governing all duties and operations hereunder may result in suspension or revocation of this permit and, in addition, may result in civil and/or criminal penalties being imposed upon the operators.

Per 35 CSR 4-5.2.g this permit will expire in two (2) years from the issue date unless permitted well work is commenced. If there are any questions, please feel free to contact me at (304) 926-0450.

A blue ink signature of James A. Martin.

James A. Martin  
Chief

Operator's Well Number: BRECKENRIDGE S-22HU  
Farm Name: CNX LAND LLC  
U.S. WELL NUMBER: 47-051-02401-00-00  
Horizontal 6A New Drill  
Date Issued: 11/17/2021



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west virginia department of environmental protection

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Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street SE, Charleston, WV 25304  
304-414-1239

Randall M. Albert, Chairman  
dep.wv.gov

November 9, 2021

Department of Environmental Protection  
Office of Oil and Gas  
Charleston, WV 25304

RE: Application for Deep Well Permit – API #47-051-02401

COMPANY: Tug Hill Operating, LLC

FARM: CNX Land, LLC Breckenridge S-22HU

COUNTY: Marshall DISTRICT: Cameron QUAD: Glen Easton

The deep well review of the application for the above company is Approved to drill to Trenton for Point Pleasant completion. Pooling Docket No. 302-306.

The applicant has complied with the provision of Chapter 22C-9, of the Code of West Virginia, nineteen hundred and thirty-one (1931), as amended, Oil and Gas Conservation Commission as follows:

1. Comments to Notice of Deviation filed? Yes. Docket No. 302-306.
2. Provided a certified copy of duly acknowledged and recorded consent and easement form from all surface owners? Yes
3. Provided a tabulation of all deep wells within one mile of the proposed location, including the API number of all deep wells: \*\*yes
4. Provided a plat showing that the productive interval of the well meets the requirements of the Rules of the Commission W. Va. C.S.R. § 39-1-4.2.

Sincerely,

Susan Rose  
Administrator

\*\*Hudson S-15HU 47-051-02328; Hudson S-16HU 47-051-02329; Breckenridge S-17HU 47-051-02396; Breckenridge S-18HU 47-051-02397; Breckenridge S-19HU 47-051-02398; Breckenridge S-20HU 47-051-02399; Breckenridge S-21HU 47-051-02400; Breckenridge S-23HU 47-051-02402

11/19/2021

## PERMIT CONDITIONS

West Virginia Code § 22-6A-8(d) allows the Office of Oil and Gas to place specific conditions upon this permit. Permit conditions have the same effect as law. Failure to adhere to the specified permit conditions may result in enforcement action.

### CONDITIONS

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1. This proposed activity may require permit coverage from the United States Army Corps of Engineers (USACE). Through this permit, you are hereby being advised to consult with USACE regarding this proposed activity.
2. If the operator encounters an unanticipated void, or an anticipated void at an unanticipated depth, the operator shall notify the inspector within 24 hours. Modifications to the casing program may be necessary to comply with W. Va. Code § 22-6A-5a (12), which requires drilling to a minimum depth of thirty feet below the bottom of the void, and installing a minimum of twenty (20) feet of casing. Under no circumstance should the operator drill more than one hundred (100) feet below the bottom of the void or install less than twenty (20) feet of casing below the bottom of the void.
3. When compacting fills, each lift before compaction shall not be more than 12 inches in height, and the moisture content of the fill material shall be within limits as determined by the Standard Proctor Density test of the actual soils used in specific engineered fill, ASTM D698, Standard Test Method for Laboratory Compaction Characteristics of Soil Using Standard Effort, to achieve 95 % compaction of the optimum density. Each lift shall be tested for compaction, with a minimum of two tests per lift per acre of fill. All test results shall be maintained on site and available for review.
4. Operator shall install signage per § 22-6A-8g (6) (B) at all source water locations included in their approved water management plan within 24 hours of water management plan activation.
5. Oil and gas water supply wells will be registered with the Office of Oil and Gas and all such wells will be constructed and plugged in accordance with the standards of the Bureau for Public Health set forth in its Legislative rule entitled *Water Well Regulations*, 64 C.S.R. 19. Operator is to contact the Bureau of Public Health regarding permit requirements. In lieu of plugging, the operator may transfer the well to the surface owner upon agreement of the parties. All drinking water wells within fifteen hundred feet of the water supply well shall be flow tested by the operator upon request of the drinking well owner prior to operating the water supply well.
6. Pursuant to the requirements pertaining to the sampling of domestic water supply wells/springs the operator shall, no later than thirty (30) days after receipt of analytical data provide a written copy to the Chief and any of the users who may have requested such analyses.
7. 24 hours prior to the initiation of the completion process the operator shall notify the Chief or his designee.
8. During the completion process the operator shall monitor annular pressures and report any anomaly noticed to the chief or his designee immediately.
9. If any explosion or other accident causing loss of life or serious personal injury occurs in or about a well or well work on a well, the well operator or its contractor shall give notice, stating the particulars of the explosion or accident, to the oil and gas inspector and the Chief, within 24 hours of said accident.
10. During the casing and cementing process, in the event cement does not return to the surface, the oil and gas inspector shall be notified within 24 hours.

API Number: \_\_\_\_\_

## PERMIT CONDITIONS

11. The operator shall provide to the Office of Oil and Gas the dates of each of the following within 30 days of their occurrence: completion of construction of the well pad, commencement of drilling, cessation of drilling, completion of any other permitted well work, and completion of the well. Such notice shall be provided by sending an email to [DEPOOGNotify@wv.gov](mailto:DEPOOGNotify@wv.gov).

11/19/2021

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
WELL WORK PERMIT APPLICATION

1) Well Operator: Tug Hill Operating, LLC      494510851      Marshall      Cameron      Glen Easton 7.5'  
Operator ID      County      District      Quadrangle

2) Operator's Well Number: Breckenridge S-22HU      Well Pad Name: Breckenridge

3) Farm Name/Surface Owner: CNX Land, LLC      Public Road Access: CR 62

4) Elevation, current ground: 1380'      Elevation, proposed post-construction: 1370.10'

5) Well Type    (a) Gas    X      Oil      \_\_\_\_\_      Underground Storage      \_\_\_\_\_

Other

(b) If Gas    Shallow      \_\_\_\_\_      Deep      X

Horizontal    X

6) Existing Pad: Yes or No    No

7) Proposed Target Formation(s), Depth(s), Anticipated Thickness and Expected Pressure(s):  
Point Pleasant is the target formation at a depth of 11,898' - 12,020', thickness of 122' and anticipated pressure of approx. 7,500 psi.

8) Proposed Total Vertical Depth: 12,170'

9) Formation at Total Vertical Depth: Trenton, plug back to Reedsville

10) Proposed Total Measured Depth: 22,805'

11) Proposed Horizontal Leg Length: 10,088.42'

12) Approximate Fresh Water Strata Depths: 70; 1,048'

13) Method to Determine Fresh Water Depths: Offset well reports or noticeable flow at the flowline or when need to start soaping

14) Approximate Saltwater Depths: 1,515'

15) Approximate Coal Seam Depths: Sewickley Coal - 952' and Pittsburgh Coal - 1042'

16) Approximate Depth to Possible Void (coal mine, karst, other): None anticipated

17) Does Proposed well location contain coal seams directly overlying or adjacent to an active mine?    Yes    X      No      \_\_\_\_\_

(a) If Yes, provide Mine Info:    Name: Marshall County Mine  
Depth: Pittsburgh coal - 1042' and subsea level - 328'  
Seam: Pittsburgh  
Owner: Murray Energy Corporation

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18) CASING AND TUBING PROGRAM

TYPE	Size (in)	New or Used	Grade	Weight per ft. (lb/ft)	FOOTAGE: For Drilling (ft)	INTERVALS: Left in Well (ft)	CEMENT: Fill-up (Cu. Ft.)/CTS
Conductor	30"	NEW	BW	BW	120'	120'	259ft^3(CTS)
Fresh Water/Coal	20"	NEW	J55	106.5#	1,150'	1,150'	1839ft^3(CTS)
Intermediate 1	13 3/8"	NEW	J55	54.5#	3,000'	3,000'	2113ft^3(CTS)
Intermediate 2	9 5/8"	NEW	HPP110	47#	11,131'	11,131'	3635ft^3(CTS)
Production	5 1/2"	NEW	P110	23#	22,805'	22,805'	5413ft^3(CTS)
Tubing	2 7/8"	NEW	P110	6.5#	11,874'		
Liners							

*B.S. 8-12-21*

TYPE	Size (in)	Wellbore Diameter (in)	Wall Thickness (in)	Burst Pressure (psi)	Anticipated Max. Internal Pressure (psi)	Cement Type	Cement Yield (cu. ft./k)
Conductor	30#	36#	1.0	2,333	1,866	CLASS A	1.2
Fresh Water/Coal	20"	26#	.5	2,410	1,928	SEE #24	1.2
Intermediate 1	13 3/8"	17 1/2"	.38	2,740	2,192	SEE #24	1.2
Intermediate 2	9 5/8"	12 1/4"	.472	10,730	6,968	SEE #24	1.33
Production	5 1/2"	8 1/2"	.415	16,510	13,208	SEE #24	1.17/1.19
Tubing	2 7/8"			14,530	11,624		
Liners							

PACKERS

Kind:	N/A			RECEIVED Office of Oil and Gas
Sizes:	N/A			AUG 13 2021
Depths Set:	N/A			WV Department of Environmental Protection

19) Describe proposed well work, including the drilling and plugging back of any pilot hole:

Drill through the Point Pleasant and TD Pilot Hole 150' into the Trenton. Log vertical section and run a solid cement plug back to proposed KOP (11,373'). Drill curve and lateral per proposed well plan, run and cement production casing. Perform CBL from 60 deg to surface, make cleanout run, and stimulate.

20) Describe fracturing/stimulating methods in detail, including anticipated max pressure and max rate:

Well to be completed with approximately 25,250,000 lb. proppant and 460,000 bbls of water. Max rate = 80bpm; max psi = 9,000#.

*B.S. 8-12-21*

21) Total Area to be disturbed, including roads, stockpile area, pits, etc., (acres): 45.40

22) Area to be disturbed for well pad only, less access road (acres): 8.21

23) Describe centralizer placement for each casing string:

Will run 3 centralizers on surface casing at equal distance. Intermediate strings will have 1 centralizer every other joint. Production casing will have one centralizer every other joint in lateral, one centralizer every joint through curve, one centralizer every other joint to surface.

24) Describe all cement additives associated with each cement type:

Sfc - Premium NE-1 + 2% CaCl; Int1 - Premium NE-1 + 1.5% CaCL + Flake; Int2 - Lead: Premium NE-1 + 5% BA-90 + .85% R-3 + 3% KCl + .75 gals/100sk FP-13L + 1% MPA-170 Tail: Premium NE-1 + .1% R-3 + 5% KCl + 1% CD-32 + .4% FL-52 + .2% ASA-301 + .6% Sodium Metasilicate; Kick Plug - Class H Cement + 1% CD-32 + .7% Sodium Metasilicate + .1% R-3 + .75 gal/100sk FP-13L; Prod - Lead: 50:50 (Poz:Class H) + .3% R-3 + .3% MPA-250 + .75 gal/100sk FP-13L Tail: 25:75 (Poz:Class H) + .3% R-3 + .3% MPA-250 + .375 gal/100sk FP-13L

25) Proposed borehole conditioning procedures:

Will circulate a minimum of 3 hours at TD, short trip to curve, circulate bottoms up, check for flow, POOH

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\*Note: Attach additional sheets as needed.



**Tug Hill Operating, LLC Casing and Cement Program**

**Breckenridge S-22HU**

**Casing**

	String	Grade	Bit Size	Depth (Measured)	Cement Fill Up
Conductor	30"	BW	36"	120'	CTS
Surface	20"	J55	26"	1,150'	CTS
Intermediate 1	13 3/8"	J55	17 1/2"	3,000'	CTS
Intermediate 2	9 5/8"	HPP110	12 1/4"	11,131'	CTS
Production	5 1/2"	HCP110	8 1/2"	22,905'	CTS

**Cement**

Surface: Premium NE-1 + 2% bwoc CaC12 + 46.5% Fresh Water – Surface Cement mixed at 15.6 ppg, Y=1.2

Intermediate 1: Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15.6 ppg, Y=1.2

Intermediate 2: Premium NE-1 + 1% bwoc CaC12 + 46.5% Fresh Water – Intermediate Cement mixed at 15.6 ppg, Y=1.99

Production: 50:50 Poz: Premium NE-1 + .1% bwoc ASA-301 + 60lb/sk ASCA-1 + .35% bwoc BA-10A + .25% bwoc MPA-170, 44 lb sack + .5% bwoc R-3 + .75 gals/100sk FP-13L – Production Cement mixed at 15.2ppg, Y = 1.18

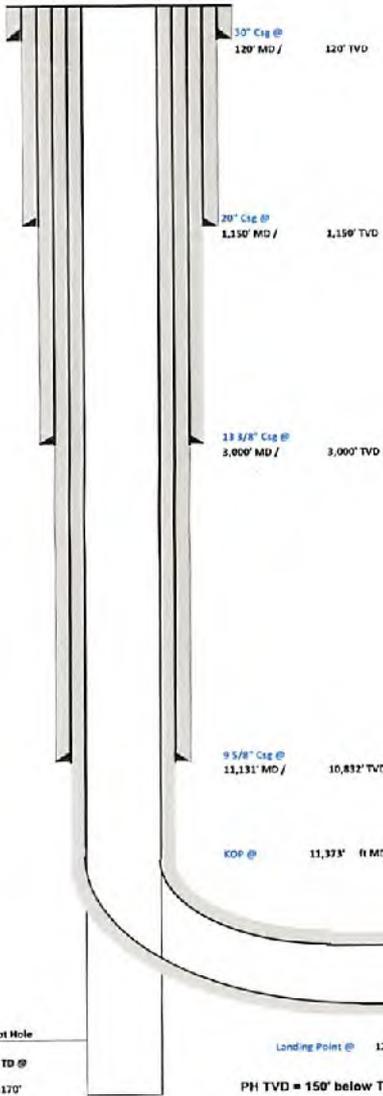
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11/19/2021

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**WELL NAME:** Breckenridge S-22HU  
**STATE:** WV **COUNTY:** Marshall  
**DISTRICT:** Cameron  
**DF Elev:** 1,370' **GL Elev:** 1,370'  
**TD:** 22,805'  
**TH Latitude:** 39.830239  
**TH Longitude:** -80.626485  
**DH Latitude:** 39.809153  
**DH Longitude:** -80.596690

FORMATION TOPS	
Formation	Depth TVD
Deepest Fresh Water	1,048'
Sewickley Coal	952'
Pittsburgh Coal	1,042'
Big Lime	2,209'
Berea	2,827'
Tully	5,826'
Marcellus	5,917'
Onondaga	5,998'
Salina	7,705'
Lockport	8,803'
Utica	11,657'
Point Pleasant	11,898'
Landing Depth	11,948'
Trenton	12,020'
Pilot Hole TD	12,170'

CASING SUMMARY							
Type	Hole Size (in)	Csg Size (in)	Depth (MD)	Depth (TVD)	Weight (lb/ft)	Grade	Top of Cement
Conductor	36	30	120'	120'	8W	BW	Surface
Surface	26	20	1,150'	1,150'	106.5	B55	Surface
Intermediate 1	17 1/2	13 3/8	3,000'	3,000'	54.5	B55	Surface
Intermediate 2	12 1/4	9 5/8	11,131'	10,832'	47	HPP110	Surface
Production	8 1/2	5 1/2	22,805'	12,124'	23	HCP110	Surface

	CEMENT SUMMARY			DRILLING DETAILS	
	Sacks	Class	Density	Fluid Type	Centralizer Notes
Conductor	338	A	15.6	Air	None
Surface	1,984	A	15.6	Air	3 Centralizers at equal distance
Intermediate 1	2,290	A	15	Air	1 Centralizer every other ft
Intermediate 2	2,998	A	14.5	Air	1 Centralizer every other ft
Production	4,778	A	15	Air / SOBIM	1 every other joint in lateral; 1 per joint in curve; 1 every other ft to sit

Pilot Hole  
 PH TD @ 12,170'  
 Landing Point @ 12,718' MD / 11,948' TVD  
 PH TVD = 150' below Trenton Top

Lateral TD @ 22,805' ft MD  
 12,124' ft TVD

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**TUG HILL**  
OPERATING

**Well:** Breckenridge S-22 HU (slot V)  
**Site:** Breckenridge (1 row)  
**Project:** Marshall County, West Virginia  
**Design:** rev4  
**Rig:**

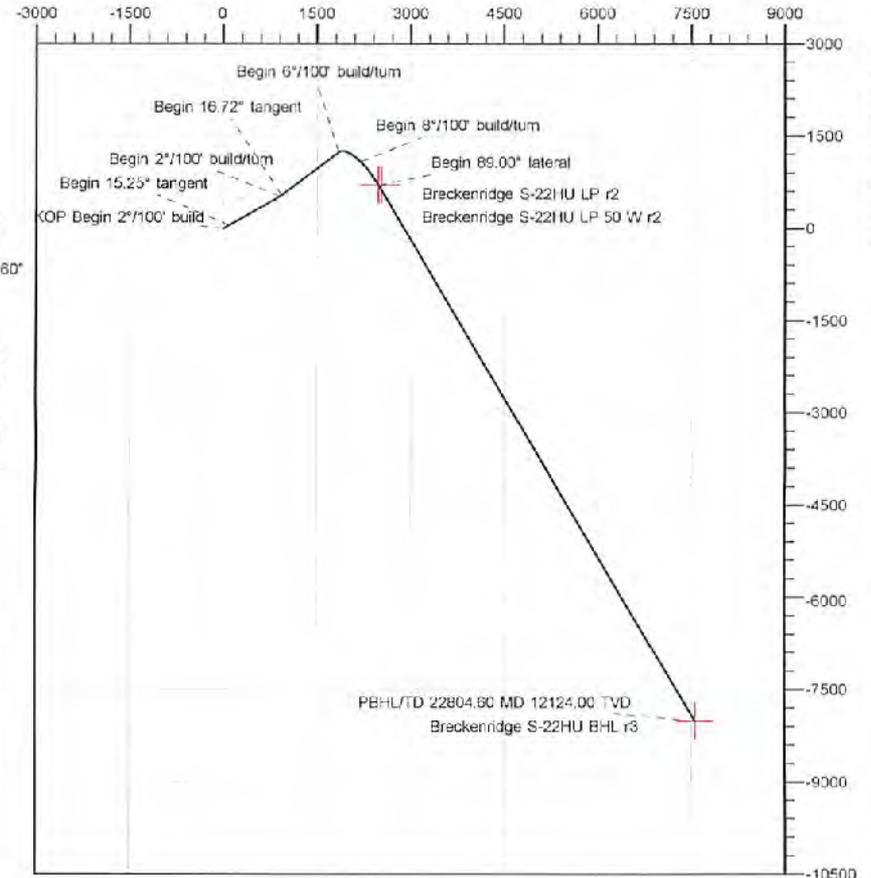
**DESIGN TARGET DETAILS**

Name	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
Breckenridge S-22HU LP 50 W r2	11948.00	702.97	2478.93	14465839.27	1747757.54	39.83214025	-80.61764461
- plan misses target center by 0.05ft at 12717.96ft MD (11948.00 TVD, 703.01 N, 2479.01 E)							
Breckenridge S-22HU LP r2	11948.00	702.97	2528.93	14465839.27	1747807.54	39.83213967	-80.61746650
- plan misses target center by 43.10ft at 12743.14ft MD (11948.43 TVD, 681.28 N, 2491.69 E)							
Breckenridge S-22HU BHL r3	12124.00	-8009.50	7558.54	14457126.82	1752837.13	39.80815300	-80.59939000
- plan hits target center							

Sec	MD	Inc	Azi	TVD	+N/-S	+E/-W	Dleg	TFace	VSecd	Annotation
1	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000	0.00	
2	2900.00	0.00	0.00	2900.00	0.00	0.00	0.00	0.000	0.00	KOP Begin 2°/100' build
3	3662.50	15.25	60.00	3653.53	50.44	87.36	2.00	60.000	23.28	Begin 15.25° tangent
4	6612.85	15.25	60.00	6500.00	438.45	759.43	0.00	0.000	202.33	
5	7234.75	15.25	60.00	7100.00	520.25	901.09	0.00	0.000	240.08	Begin 2°/100' build/tum
6	7359.18	16.72	52.69	7219.62	539.28	929.50	2.00	-57.500	245.73	Begin 16.72° tangent
7	11373.05	16.72	52.69	11063.87	1239.12	1847.71	0.00	0.000	356.94	Begin 6°/100' build/tum
8	12197.93	50.00	133.85	11763.35	1032.33	2191.54	6.00	95.429	717.00	Begin 8°/100' build/tum
9	12717.99	89.00	149.76	11948.00	702.99	2479.03	8.00	24.407	1190.15	Begin 69.00° lateral
10	22804.60	89.00	149.76	12124.00	-8009.50	7558.54	0.00	0.000	1612.88	PRHL/TD 22804.60 MD 12124.00 TVD

**SECTION DETAILS**

West(-)/East(+) (3000 ft/in)



Geodetic System: Universal Transverse Mercator (US Survey Feet)  
Datum: NAD83 West Virginia - HARN  
Ellipsoid: GRS 1980  
Zone: Zone 17N (84 W to 78 W)

System Datum: Mean Sea Level  
Depth Reference: GL @ 1370.00ft

Northing	Easting	Latitude	Longitude
14465136.30	1745276.51	39.83023653	-80.62649499

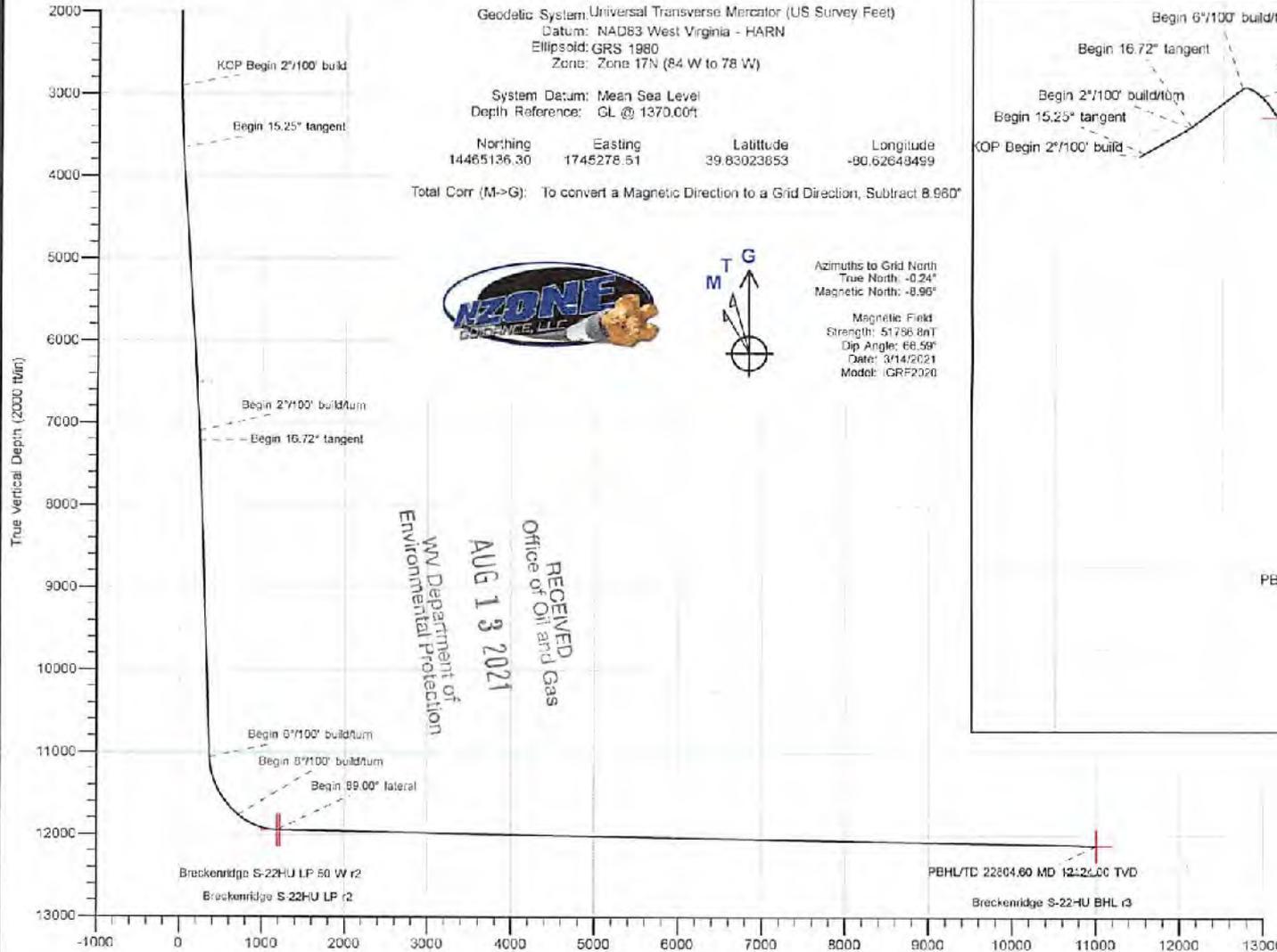
Total Corr (M->G): To convert a Magnetic Direction to a Grid Direction, Subtract 8.980°



Azimuths to Grid North  
True North: -0.24°  
Magnetic North: -8.96°

Magnetic Field  
Strength: 51736.8nT  
Dip Angle: 68.59°  
Date: 3/14/2021  
Model: GRF2020

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Vertical Section at 136.66° (2000 ft/in)



Planning Report - Geographic

<b>Database:</b>	DB_Dec2220_v16	<b>Local Co-ordinate Reference:</b>	Well Breckenridge S-22 HU (slot V)
<b>Company:</b>	Tug Hill Operating LLC	<b>TVD Reference:</b>	GL @ 1370.00ft
<b>Project:</b>	Marshall County, West Virginia	<b>MD Reference:</b>	GL @ 1370.00ft
<b>Site:</b>	Breckenridge (1 row)	<b>North Reference:</b>	Grid
<b>Well:</b>	Breckenridge S-22 HU (slot V)	<b>Survey Calculation Method:</b>	Minimum Curvature
<b>Wellbore:</b>	Original Hole		
<b>Design:</b>	rev4		

<b>Project</b>	Marshall County, West Virginia		
<b>Map System:</b>	Universal Transverse Mercator (US Survey Feet)	<b>System Datum:</b>	Mean Sea Level
<b>Geo Datum:</b>	NAD83 West Virginia - HARN		
<b>Map Zone:</b>	Zone 17N (84 W to 78 W)		

<b>Site</b>	Breckenridge (1 row)				
<b>Site Position:</b>		<b>Northing:</b>	14,465,184.76 usft	<b>Latitude:</b>	39.83037401
<b>From:</b>	Lat/Long	<b>Easting:</b>	1,745,068.18 usft	<b>Longitude:</b>	-80.62723379
<b>Position Uncertainty:</b>	0.00 ft	<b>Slot Radius:</b>	13-3/16 "		

<b>Well</b>	Breckenridge S-22 HU (slot V)					
<b>Well Position</b>	<b>+N/-S</b>	0.00 ft	<b>Northing:</b>	14,465,136.31 usft	<b>Latitude:</b>	39.83023853
	<b>+E/-W</b>	0.00 ft	<b>Easting:</b>	1,745,278.61 usft	<b>Longitude:</b>	-80.62648499
<b>Position Uncertainty</b>	0.00 ft	<b>Wellhead Elevation:</b>	ft	<b>Ground Level:</b>	1,370.00 ft	
<b>Grid Convergence:</b>						

<b>Wellbore</b>	Original Hole				
<b>Magnetics</b>	<b>Model Name</b>	<b>Sample Date</b>	<b>Declination (°)</b>	<b>Dip Angle (°)</b>	<b>Field Strength (nT)</b>
	IGRF2020	3/14/2021	-8.721	66.586	51,785.77877474

<b>Design</b>	rev4				
<b>Audit Notes:</b>					
<b>Version:</b>	<b>Phase:</b>	PLAN	<b>Tie On Depth:</b>	0.00	
<b>Vertical Section:</b>	<b>Depth From (TVD) (ft)</b>	<b>+N/-S (ft)</b>	<b>+E/-W (ft)</b>	<b>Direction (°)</b>	
	0.00	0.00	0.00	136.65	

<b>Plan Survey Tool Program</b>	<b>Date</b>				
<b>Depth From (ft)</b>	<b>Depth To (ft)</b>	<b>Survey (Wellbore)</b>	<b>Tool Name</b>	<b>Remarks</b>	
1	0.00	22,804.61 rev4 (Original Hole)			

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Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Breckenridge S-22 HU (slot V)
Company:	Tug Hill Operating LLC	TVD Reference:	GL @ 1370.00ft
Project:	Marshall County, West Virginia	MD Reference:	GL @ 1370.00ft
Site:	Breckenridge (1 row)	North Reference:	Grid
Well:	Breckenridge S-22 HU (slot V)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev4		

Plan Sections											
Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Dogleg Rate (°/100ft)	Build Rate (°/100ft)	Turn Rate (°/100ft)	TFO (°)	Target	
0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.000		
2,900.00	0.00	0.00	2,900.00	0.00	0.00	0.00	0.00	0.00	0.000		
3,662.50	15.25	60.00	3,653.53	50.44	87.36	2.00	2.00	0.00	60.000		
6,612.36	15.25	60.00	6,500.00	-438.46	759.43	0.00	0.00	0.00	0.000		
7,234.76	15.25	60.00	7,100.00	520.25	901.09	0.00	0.00	0.00	0.000		
7,359.18	16.72	52.69	7,219.62	539.20	929.50	2.00	1.18	-5.88	-57.500		
11,373.05	16.72	52.69	11,063.87	1,239.12	1,847.71	0.00	0.00	0.00	0.000		
12,197.93	50.00	133.83	11,768.35	1,062.36	2,191.64	6.00	4.04	9.84	95.429		
12,717.99	89.00	149.76	11,948.00	702.99	2,479.03	8.00	7.50	3.06	24.407		
22,804.61	89.00	149.76	12,124.00	-8,009.50	7,558.54	0.00	0.00	0.00	0.000	Breckenridge S-22HU	

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Planning Report - Geographic

Database: DB\_Dec2220\_v16  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia  
 Site: Breckenridge (1 row)  
 Well: Breckenridge S-22 HU (slot V)  
 Wellbore: Original Hole  
 Design: rev4

Local Co-ordinate Reference: Well Breckenridge S-22 HU (slot V)  
 TVD Reference: GL @ 1370.00ft  
 MD Reference: GL @ 1370.00ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

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 Environmental Protection

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
0.00	0.00	0.00	0.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
100.00	0.00	0.00	100.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
200.00	0.00	0.00	200.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
300.00	0.00	0.00	300.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
400.00	0.00	0.00	400.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
500.00	0.00	0.00	500.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
600.00	0.00	0.00	600.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
700.00	0.00	0.00	700.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
800.00	0.00	0.00	800.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
900.00	0.00	0.00	900.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
1,000.00	0.00	0.00	1,000.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
1,100.00	0.00	0.00	1,100.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
1,200.00	0.00	0.00	1,200.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
1,300.00	0.00	0.00	1,300.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
1,400.00	0.00	0.00	1,400.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
1,500.00	0.00	0.00	1,500.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
1,600.00	0.00	0.00	1,600.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
1,700.00	0.00	0.00	1,700.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
1,800.00	0.00	0.00	1,800.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
1,900.00	0.00	0.00	1,900.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
2,000.00	0.00	0.00	2,000.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
2,100.00	0.00	0.00	2,100.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
2,200.00	0.00	0.00	2,200.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
2,300.00	0.00	0.00	2,300.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
2,400.00	0.00	0.00	2,400.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
2,500.00	0.00	0.00	2,500.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
2,600.00	0.00	0.00	2,600.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
2,700.00	0.00	0.00	2,700.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
2,800.00	0.00	0.00	2,800.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
2,900.00	0.00	0.00	2,900.00	0.00	0.00	14,465,136.31	1,745,278.61	39.83023853	-80.62648499
<b>KOP Begin 2°/100' build</b>									
3,000.00	2.00	60.00	2,999.98	0.97	1.51	14,465,137.18	1,745,280.12	39.83024091	-80.62647959
3,100.00	4.00	60.00	3,099.84	3.49	6.04	14,465,139.79	1,745,284.65	39.83024804	-80.62646341
3,200.00	6.00	60.00	3,199.45	7.85	13.68	14,465,144.15	1,745,292.20	39.83025993	-80.62643646
3,300.00	8.00	60.00	3,298.70	13.94	24.14	14,465,150.25	1,745,302.75	39.83027654	-80.62639878
3,400.00	10.00	60.00	3,397.47	21.76	37.69	14,465,158.07	1,745,316.30	39.83029786	-80.62635041
3,500.00	12.00	60.00	3,495.82	31.30	54.22	14,465,167.61	1,745,332.82	39.83032387	-80.62629142
3,600.00	14.00	60.00	3,593.06	42.55	73.70	14,465,178.85	1,745,352.30	39.83035453	-80.62622186
3,652.50	15.25	60.00	3,653.53	50.44	87.35	14,465,188.74	1,745,365.97	39.83037604	-80.62617307
<b>Begin 15.25° tangent</b>									
3,700.00	15.25	60.00	3,689.71	55.37	95.90	14,465,191.68	1,745,374.51	39.83038948	-80.62614257
3,800.00	15.25	60.00	3,786.19	58.52	118.68	14,465,204.83	1,745,397.29	39.83042535	-80.62606123
3,900.00	15.25	60.00	3,882.67	81.67	141.46	14,465,217.98	1,745,420.07	39.83048120	-80.62597990
4,000.00	15.25	60.00	3,979.14	94.02	164.24	14,465,231.13	1,745,442.85	39.83049705	-80.62589857
4,100.00	15.25	60.00	4,075.62	107.98	187.02	14,465,244.28	1,745,465.63	39.83053291	-80.62581723
4,200.00	15.25	60.00	4,172.10	121.13	209.80	14,465,257.43	1,745,488.41	39.83056877	-80.62573590
4,300.00	15.25	60.00	4,268.58	134.28	232.58	14,465,270.58	1,745,511.19	39.83060462	-80.62565457
4,400.00	15.25	60.00	4,365.06	147.43	255.36	14,465,283.74	1,745,533.97	39.83064048	-80.62557323
4,500.00	15.25	60.00	4,461.54	160.58	278.14	14,465,296.89	1,745,556.74	39.83067633	-80.62549190
4,600.00	15.25	60.00	4,558.02	173.73	300.92	14,465,310.04	1,745,579.52	39.83071219	-80.62541057
4,700.00	15.25	60.00	4,654.50	186.89	323.70	14,465,323.19	1,745,602.30	39.83074804	-80.62532923
4,800.00	15.25	60.00	4,750.97	200.04	346.48	14,465,336.34	1,745,625.08	39.83078390	-80.62524790
4,900.00	15.25	60.00	4,847.45	213.19	369.25	14,465,349.49	1,745,647.86	39.83081975	-80.62516657
5,000.00	15.25	60.00	4,943.93	226.34	392.03	14,465,362.65	1,745,670.64	39.83085561	-80.62508523



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 Company: Tug Hill Operating LLC  
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Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
5,100.00	15.25	60.00	5,040.41	239.49	414.81	14,465,375.60	1,745,693.42	39.83089146	-80.62500390
5,200.00	15.25	60.00	5,136.89	252.84	437.59	14,465,388.95	1,745,716.20	39.83092732	-80.62492256
5,300.00	15.25	60.00	5,233.37	265.80	460.37	14,465,402.10	1,745,738.98	39.83096317	-80.62484123
5,400.00	15.25	60.00	5,329.85	278.95	483.15	14,465,415.25	1,745,761.76	39.83099903	-80.62475989
5,500.00	15.25	60.00	5,426.33	292.10	505.93	14,465,428.40	1,745,784.54	39.83103488	-80.62467856
5,600.00	15.25	60.00	5,522.80	305.25	528.71	14,465,441.55	1,745,807.32	39.83107073	-80.62459723
5,700.00	15.25	60.00	5,619.28	318.40	551.49	14,465,454.71	1,745,830.09	39.83110659	-80.62451589
5,800.00	15.25	60.00	5,715.76	331.55	574.27	14,465,467.86	1,745,852.87	39.83114244	-80.62443456
5,900.00	15.25	60.00	5,812.24	344.70	597.05	14,465,481.01	1,745,875.65	39.83117830	-80.62435322
6,000.00	15.25	60.00	5,908.72	357.86	619.83	14,465,494.16	1,745,898.43	39.83121415	-80.62427189
6,100.00	15.25	60.00	6,005.20	371.01	642.60	14,465,507.31	1,745,921.21	39.83125001	-80.62419055
6,200.00	15.25	60.00	6,101.68	384.16	665.38	14,465,520.46	1,745,943.99	39.83128586	-80.62410922
6,300.00	15.25	60.00	6,198.16	397.31	688.16	14,465,533.62	1,745,966.77	39.83132171	-80.62402788
6,400.00	15.25	60.00	6,294.63	410.46	710.94	14,465,546.77	1,745,989.55	39.83135757	-80.62394655
6,500.00	15.25	60.00	6,391.11	423.61	733.72	14,465,559.92	1,746,012.33	39.83139342	-80.62386521
6,600.00	15.25	60.00	6,487.59	436.77	756.50	14,465,573.07	1,746,035.11	39.83142928	-80.62378388
6,612.86	15.25	60.00	6,500.00	438.46	759.43	14,465,574.76	1,746,038.04	39.83143389	-80.62377342
6,700.00	15.25	60.00	6,584.07	449.92	779.28	14,465,586.22	1,746,057.89	39.83146513	-80.62370254
6,800.00	15.25	60.00	6,680.55	463.07	802.06	14,465,599.37	1,746,080.66	39.83150098	-80.62362121
6,900.00	15.25	60.00	6,777.03	476.22	824.84	14,465,612.52	1,746,103.44	39.83153684	-80.62353987
7,000.00	15.25	60.00	6,873.51	489.37	847.62	14,465,625.68	1,746,126.22	39.83157269	-80.62345853
7,100.00	15.25	60.00	6,969.99	502.52	870.40	14,465,638.83	1,746,149.00	39.83160854	-80.62337720
7,200.00	15.25	60.00	7,066.46	515.67	893.18	14,465,651.98	1,746,171.78	39.83164440	-80.62329586
7,234.76	15.25	60.00	7,100.00	520.25	901.09	14,465,656.55	1,746,179.70	39.83165886	-80.62326759
<b>Begin 2°/100' build/turn</b>									
7,300.00	15.99	66.00	7,182.83	529.56	915.97	14,465,665.86	1,746,194.58	39.83168227	-80.62321445
7,359.18	16.72	52.69	7,219.62	539.28	929.50	14,465,675.58	1,746,208.11	39.83170879	-80.62316612
<b>Begin 16.72° tangent</b>									
7,400.00	16.72	52.69	7,259.71	546.39	938.84	14,465,682.70	1,746,217.44	39.83172823	-80.62313275
7,500.00	16.72	52.69	7,354.49	563.83	961.71	14,465,700.13	1,746,240.32	39.83177585	-80.62305101
7,600.00	16.72	52.69	7,450.26	581.27	984.59	14,465,717.57	1,746,263.20	39.83182347	-80.62296926
7,700.00	16.72	52.69	7,546.04	598.70	1,007.47	14,465,735.01	1,746,286.07	39.83187108	-80.62288752
7,800.00	16.72	52.69	7,641.81	616.14	1,030.34	14,465,752.44	1,746,308.95	39.83191870	-80.62280577
7,900.00	16.72	52.69	7,737.59	633.57	1,053.22	14,465,769.88	1,746,331.82	39.83196632	-80.62272403
8,000.00	16.72	52.69	7,833.36	651.01	1,076.09	14,465,787.31	1,746,354.70	39.83201393	-80.62264228
8,100.00	16.72	52.69	7,929.13	668.44	1,098.97	14,465,804.75	1,746,377.58	39.83205155	-80.62256054
8,200.00	16.72	52.69	8,024.91	685.88	1,121.85	14,465,822.18	1,746,400.45	39.83209917	-80.62247879
8,300.00	16.72	52.69	8,120.68	703.32	1,144.72	14,465,839.62	1,746,423.33	39.83215678	-80.62239704
8,400.00	16.72	52.69	8,216.46	720.75	1,167.59	14,465,857.05	1,746,446.20	39.83220440	-80.62231530
8,500.00	16.72	52.69	8,312.23	738.19	1,190.47	14,465,874.49	1,746,469.08	39.83225202	-80.62223355
8,600.00	16.72	52.69	8,408.00	755.62	1,213.35	14,465,891.93	1,746,491.95	39.83229963	-80.62215180
8,700.00	16.72	52.69	8,503.78	773.06	1,236.23	14,465,909.36	1,746,514.83	39.83234725	-80.62207006
8,800.00	16.72	52.69	8,599.55	790.49	1,259.10	14,465,926.80	1,746,537.71	39.83239487	-80.62198831
8,900.00	16.72	52.69	8,695.33	807.93	1,281.98	14,465,944.23	1,746,560.58	39.83244248	-80.62190656
9,000.00	16.72	52.69	8,791.10	825.36	1,304.85	14,465,961.67	1,746,583.46	39.83249010	-80.62182482
9,100.00	16.72	52.69	8,886.88	842.80	1,327.73	14,465,979.10	1,746,606.33	39.83253771	-80.62174307
9,200.00	16.72	52.69	8,982.65	860.24	1,350.61	14,465,996.54	1,746,629.21	39.83258533	-80.62166132
9,300.00	16.72	52.69	9,078.42	877.67	1,373.48	14,466,013.97	1,746,652.09	39.83263295	-80.62157958
9,400.00	16.72	52.69	9,174.20	895.11	1,396.36	14,466,031.41	1,746,674.96	39.83268056	-80.62149783
9,500.00	16.72	52.69	9,269.97	912.54	1,419.23	14,466,048.85	1,746,697.84	39.83272816	-80.62141608
9,600.00	16.72	52.69	9,365.75	929.98	1,442.11	14,466,066.28	1,746,720.71	39.83277579	-80.62133433
9,700.00	16.72	52.69	9,461.52	947.41	1,464.98	14,466,083.72	1,746,743.59	39.83282341	-80.62125259
9,800.00	16.72	52.69	9,557.29	964.85	1,487.86	14,466,101.15	1,746,766.47	39.83287102	-80.62117084
9,900.00	16.72	52.69	9,653.07	982.28	1,510.74	14,466,118.59	1,746,789.34	39.83291864	-80.62108909



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10,000.00	16.72	52.69	9,748.84	999.72	1,533.61	14,466,136.02	1,746,812.22	39.83296626	-80.62100734
10,100.00	16.72	52.69	9,844.62	1,017.16	1,556.49	14,466,153.46	1,746,835.09	39.83301387	-80.62092560
10,200.00	16.72	52.69	9,940.39	1,034.59	1,579.36	14,466,170.89	1,746,857.97	39.83306149	-80.62084385
10,300.00	16.72	52.69	10,036.17	1,052.03	1,602.24	14,466,188.33	1,746,880.85	39.83310910	-80.62076210
10,400.00	16.72	52.69	10,131.94	1,069.46	1,625.12	14,466,205.77	1,746,903.72	39.83315672	-80.62068035
10,500.00	16.72	52.69	10,227.71	1,086.90	1,647.99	14,466,223.20	1,746,926.60	39.83320433	-80.62059860
10,600.00	16.72	52.69	10,323.49	1,104.33	1,670.87	14,466,240.64	1,746,949.47	39.83325195	-80.62051685
10,700.00	16.72	52.69	10,419.26	1,121.77	1,693.74	14,466,258.07	1,746,972.35	39.83329956	-80.62043510
10,800.00	16.72	52.69	10,515.04	1,139.20	1,716.62	14,466,275.51	1,746,995.23	39.83334718	-80.62035336
10,900.00	16.72	52.69	10,610.81	1,156.64	1,739.50	14,466,292.94	1,747,018.10	39.83339479	-80.62027161
11,000.00	16.72	52.69	10,706.59	1,174.08	1,762.37	14,466,310.38	1,747,040.98	39.83344241	-80.62018986
11,100.00	16.72	52.69	10,802.36	1,191.51	1,785.25	14,466,327.81	1,747,063.85	39.83349002	-80.62010811
11,200.00	16.72	52.69	10,898.13	1,208.95	1,808.12	14,466,345.25	1,747,086.73	39.83353764	-80.62002636
11,300.00	16.72	52.69	10,993.91	1,226.38	1,831.00	14,466,362.68	1,747,109.60	39.83358525	-80.61994461
11,373.05	16.72	52.69	11,063.87	1,239.12	1,847.71	14,466,375.42	1,747,126.32	39.83362004	-80.61986289
<b>Begin 6°/100' build/turn</b>									
11,400.00	16.64	58.32	11,089.89	1,243.50	1,854.08	14,466,379.80	1,747,132.68	39.83353196	-80.61986215
11,450.00	16.90	68.69	11,137.57	1,249.90	1,866.94	14,466,386.20	1,747,145.55	39.83354941	-80.61981623
11,500.00	17.66	78.48	11,185.33	1,254.05	1,881.14	14,466,390.36	1,747,159.75	39.83356066	-80.61976557
11,550.00	18.85	87.27	11,232.82	1,255.95	1,896.65	14,466,392.26	1,747,175.25	39.83356570	-80.61971033
11,600.00	20.41	94.92	11,279.92	1,255.59	1,913.40	14,466,391.89	1,747,192.01	39.83356450	-80.61965064
11,650.00	22.25	101.43	11,326.50	1,252.97	1,931.37	14,466,389.27	1,747,209.98	39.83356709	-80.61958667
11,700.00	24.32	106.95	11,372.43	1,248.09	1,950.50	14,466,384.39	1,747,229.11	39.833564347	-80.61951860
11,750.00	26.55	111.62	11,417.59	1,240.97	1,970.74	14,466,377.27	1,747,249.35	39.833562368	-80.61944661
11,800.00	28.91	115.59	11,461.84	1,231.63	1,992.04	14,466,367.93	1,747,270.64	39.833559778	-80.61937090
11,850.00	31.37	119.01	11,505.08	1,220.09	2,014.33	14,466,356.40	1,747,292.93	39.833556585	-80.61929168
11,900.00	33.92	121.98	11,547.18	1,206.40	2,037.55	14,466,342.70	1,747,316.15	39.83352795	-80.61920917
11,950.00	36.52	124.55	11,588.03	1,190.57	2,061.64	14,466,326.87	1,747,340.25	39.83346421	-80.61912359
12,000.00	39.17	126.84	11,627.51	1,172.66	2,086.54	14,466,308.98	1,747,355.15	39.83343474	-80.61903517
12,050.00	41.87	128.87	11,665.52	1,152.72	2,112.18	14,466,289.02	1,747,390.78	39.83337967	-80.61894416
12,100.00	44.59	130.71	11,701.95	1,130.80	2,138.48	14,466,267.10	1,747,417.08	39.83331916	-80.61885081
12,150.00	47.34	132.37	11,736.70	1,106.95	2,165.37	14,466,243.26	1,747,443.97	39.83325337	-80.61875537
12,197.93	50.00	133.83	11,769.35	1,082.36	2,191.64	14,466,218.66	1,747,470.24	39.83318552	-80.61866218
<b>Begin 8°/100' build/turn</b>									
12,200.00	50.15	133.92	11,769.68	1,081.26	2,192.79	14,466,217.56	1,747,471.39	39.83318248	-80.61865611
12,250.00	53.81	135.96	11,800.47	1,053.43	2,220.65	14,466,189.73	1,747,499.25	39.83310573	-80.61855929
12,300.00	57.51	137.82	11,828.67	1,023.29	2,248.85	14,466,159.59	1,747,527.45	39.83302262	-80.61845931
12,350.00	61.23	139.53	11,854.15	990.98	2,277.24	14,466,127.28	1,747,555.84	39.83293356	-80.61835866
12,400.00	64.97	141.12	11,876.77	956.66	2,305.89	14,466,092.96	1,747,584.29	39.83283998	-80.61825784
12,450.00	68.72	142.82	11,896.43	920.49	2,334.06	14,466,058.80	1,747,612.66	39.83273934	-80.61815734
12,500.00	72.49	144.05	11,913.03	882.67	2,362.21	14,466,018.97	1,747,640.81	39.83263513	-80.61805764
12,550.00	75.27	145.41	11,926.49	843.36	2,390.00	14,465,979.86	1,747,668.61	39.83252685	-80.61795923
12,600.00	80.05	146.74	11,936.75	802.76	2,417.31	14,465,939.06	1,747,695.91	39.83241504	-80.61786260
12,650.00	83.84	148.03	11,943.75	761.07	2,443.99	14,465,897.37	1,747,722.59	39.83230023	-80.61775820
12,700.00	87.64	149.30	11,947.47	718.49	2,469.91	14,465,854.79	1,747,748.51	39.83219299	-80.61765651
12,717.99	89.00	149.76	11,948.00	702.99	2,479.03	14,465,839.29	1,747,757.83	39.83214032	-80.61764427
<b>Begin 89.00° lateral</b>									
12,800.00	89.00	149.76	11,949.43	632.15	2,520.33	14,465,768.45	1,747,798.83	39.83194530	-80.61749824
12,900.00	89.00	149.76	11,951.17	545.77	2,570.89	14,465,682.08	1,747,849.29	39.83170750	-80.61732018
13,000.00	89.00	149.76	11,952.92	458.40	2,621.05	14,465,595.70	1,747,899.55	39.83146670	-80.61714212
13,100.00	89.00	149.76	11,954.66	373.02	2,671.40	14,465,509.33	1,747,950.01	39.83123190	-80.61696406
13,200.00	89.00	149.76	11,956.41	288.64	2,721.76	14,465,422.95	1,748,000.37	39.83099410	-80.61678600
13,300.00	89.00	149.76	11,958.15	200.27	2,772.12	14,465,336.57	1,748,050.72	39.83075630	-80.61660794
13,400.00	89.00	149.76	11,959.90	113.89	2,822.48	14,465,250.20	1,748,101.08	39.83051850	-80.61642989



Planning Report - Geographic

Database: DB\_Dec2220\_v18  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia  
 Site: Breckenridge (1 row)  
 Well: Brackenridge S-22 HU (slot V)  
 Wellbore: Original Hole  
 Design: rev4

Local Co-ordinate Reference: Well Breckenridge S-22 HU (slot V)  
 TVD Reference: GL @ 1370.00ft  
 MD Reference: GL @ 1370.00ft  
 North Reference: Grid  
 Survey Calculation Method: Minimum Curvature

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Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
13,500.00	89.00	149.76	11,961.64	27.51	2,872.84	14,465,163.82	1,748,151.44	39.83028070	-80.61625184
13,600.00	89.00	149.76	11,963.39	-58.86	2,923.20	14,465,077.44	1,748,201.80	39.83004290	-80.61607378
13,700.00	89.00	149.76	11,965.13	-145.24	2,973.56	14,464,991.07	1,748,252.16	39.82980509	-80.61589573
13,800.00	89.00	149.76	11,966.88	-231.62	3,023.92	14,464,904.69	1,748,302.52	39.82956729	-80.61571768
13,900.00	89.00	149.76	11,968.62	-317.99	3,074.28	14,464,818.31	1,748,352.88	39.82932949	-80.61553863
14,000.00	89.00	149.76	11,970.37	-404.37	3,124.63	14,464,731.94	1,748,403.24	39.82909169	-80.61536159
14,100.00	89.00	149.76	11,972.11	-490.75	3,174.99	14,464,645.56	1,748,453.60	39.82885388	-80.61518354
14,200.00	89.00	149.76	11,973.86	-577.12	3,225.35	14,464,559.18	1,748,503.95	39.82861508	-80.61500549
14,300.00	89.00	149.76	11,975.60	-663.50	3,275.71	14,464,472.81	1,748,554.31	39.82837828	-80.61482745
14,400.00	89.00	149.76	11,977.35	-749.86	3,326.07	14,464,386.43	1,748,604.67	39.82814047	-80.61464941
14,500.00	89.00	149.76	11,979.09	-836.25	3,376.43	14,464,300.05	1,748,655.03	39.82790267	-80.61447137
14,600.00	89.00	149.76	11,980.84	-922.63	3,426.79	14,464,213.68	1,748,705.39	39.82766486	-80.61429333
14,700.00	89.00	149.76	11,982.58	-1,009.01	3,477.15	14,464,127.30	1,748,755.75	39.82742706	-80.61411529
14,800.00	89.00	149.76	11,984.33	-1,095.38	3,527.51	14,464,040.92	1,748,805.11	39.82718925	-80.61393725
14,900.00	89.00	149.76	11,986.07	-1,181.76	3,577.87	14,463,954.55	1,748,855.47	39.82695145	-80.61375921
15,000.00	89.00	149.76	11,987.82	-1,268.14	3,628.22	14,463,868.17	1,748,905.82	39.82671364	-80.61358118
15,100.00	89.00	149.76	11,989.56	-1,354.51	3,678.58	14,463,781.79	1,748,957.18	39.82647584	-80.61340314
15,200.00	89.00	149.76	11,991.31	-1,440.89	3,728.94	14,463,695.42	1,748,007.54	39.82623803	-80.61322511
15,300.00	89.00	149.76	11,993.05	-1,527.27	3,779.30	14,463,609.04	1,748,057.90	39.82600022	-80.61304708
15,400.00	89.00	149.76	11,994.80	-1,613.64	3,829.65	14,463,522.67	1,748,108.26	39.82576242	-80.61286905
15,500.00	89.00	149.76	11,996.54	-1,700.02	3,880.02	14,463,436.29	1,748,158.62	39.82552461	-80.61269102
15,600.00	89.00	149.76	11,998.29	-1,786.40	3,930.38	14,463,349.91	1,748,208.98	39.82528680	-80.61251299
15,700.00	89.00	149.76	12,000.03	-1,872.77	3,980.74	14,463,263.54	1,748,259.34	39.82504900	-80.61233496
15,800.00	89.00	149.76	12,001.77	-1,959.15	4,031.10	14,463,177.16	1,748,309.70	39.82481119	-80.61215694
15,900.00	89.00	149.76	12,003.52	-2,045.53	4,081.45	14,463,090.78	1,748,360.05	39.82457338	-80.61197892
16,000.00	89.00	149.76	12,005.26	-2,131.90	4,131.81	14,463,004.41	1,748,410.41	39.82433557	-80.61180089
16,100.00	89.00	149.76	12,007.01	-2,218.28	4,182.17	14,462,918.03	1,748,460.77	39.82409776	-80.61162287
16,200.00	89.00	149.76	12,008.75	-2,304.66	4,232.53	14,462,831.65	1,748,511.13	39.82385995	-80.61144485
16,300.00	89.00	149.76	12,010.50	-2,391.03	4,282.89	14,462,745.28	1,748,561.49	39.82362214	-80.61126683
16,400.00	89.00	149.76	12,012.24	-2,477.41	4,333.25	14,462,658.90	1,748,611.85	39.82338434	-80.61108881
16,500.00	89.00	149.76	12,013.99	-2,563.79	4,383.61	14,462,572.52	1,748,662.21	39.82314653	-80.61091080
16,600.00	89.00	149.76	12,015.73	-2,650.16	4,433.97	14,462,486.15	1,748,712.57	39.82290872	-80.61073278
16,700.00	89.00	149.76	12,017.48	-2,736.54	4,484.33	14,462,399.77	1,748,762.92	39.82267090	-80.61055477
16,800.00	89.00	149.76	12,019.22	-2,822.92	4,534.68	14,462,313.39	1,748,813.28	39.82243309	-80.61037675
16,900.00	89.00	149.76	12,020.97	-2,909.29	4,585.04	14,462,227.02	1,748,863.64	39.82219528	-80.61019874
17,000.00	89.00	149.76	12,022.71	-2,995.67	4,635.40	14,462,140.64	1,748,914.00	39.82195747	-80.61002073
17,100.00	89.00	149.76	12,024.46	-3,082.05	4,685.76	14,462,054.26	1,748,964.36	39.82171965	-80.60984272
17,200.00	89.00	149.76	12,026.20	-3,168.42	4,736.12	14,461,967.89	1,750,014.72	39.82148185	-80.60966471
17,300.00	89.00	149.76	12,027.95	-3,254.80	4,786.48	14,461,881.51	1,750,065.08	39.82124404	-80.60948670
17,400.00	89.00	149.76	12,029.69	-3,341.18	4,836.84	14,461,795.13	1,750,115.44	39.82100623	-80.60930870
17,500.00	89.00	149.76	12,031.44	-3,427.55	4,887.20	14,461,708.76	1,750,165.80	39.82076841	-80.60913069
17,600.00	89.00	149.76	12,033.18	-3,513.93	4,937.56	14,461,622.38	1,750,216.15	39.82053060	-80.60895269
17,700.00	89.00	149.76	12,034.93	-3,600.31	4,987.92	14,461,536.01	1,750,266.51	39.82029279	-80.60877469
17,800.00	89.00	149.76	12,036.67	-3,686.68	5,038.27	14,461,449.63	1,750,316.87	39.82005499	-80.60859669
17,900.00	89.00	149.76	12,038.42	-3,773.06	5,088.63	14,461,363.25	1,750,367.23	39.81981718	-80.60841869
18,000.00	89.00	149.76	12,040.16	-3,859.44	5,138.99	14,461,276.86	1,750,417.59	39.81957937	-80.60824069
18,100.00	89.00	149.76	12,041.91	-3,945.81	5,189.35	14,461,190.50	1,750,467.95	39.81934156	-80.60806269
18,200.00	89.00	149.76	12,043.65	-4,032.19	5,239.71	14,461,104.12	1,750,518.31	39.81910375	-80.60788469
18,300.00	89.00	149.76	12,045.40	-4,118.57	5,290.07	14,461,017.75	1,750,568.67	39.81886594	-80.60770670
18,400.00	89.00	149.76	12,047.14	-4,204.94	5,340.43	14,460,931.37	1,750,619.02	39.81862813	-80.60752871
18,500.00	89.00	149.76	12,048.89	-4,291.32	5,390.79	14,460,844.99	1,750,669.38	39.81839032	-80.60735071
18,600.00	89.00	149.76	12,050.63	-4,377.70	5,441.15	14,460,758.62	1,750,719.74	39.81815251	-80.60717272
18,700.00	89.00	149.76	12,052.38	-4,464.07	5,491.50	14,460,672.24	1,750,770.10	39.81791471	-80.60699473
18,800.00	89.00	149.76	12,054.12	-4,550.45	5,541.86	14,460,585.86	1,750,820.46	39.81767692	-80.60681674
18,900.00	89.00	149.76	12,055.87	-4,636.83	5,592.22	14,460,499.49	1,750,870.82	39.81743911	-80.60663876



Planning Report - Geographic

Database: DB\_Dec2220\_v16  
 Company: Tug Hill Operating LLC  
 Project: Marshall County, West Virginia  
 Site: Breckenridge (1 row)  
 Well: Breckenridge S-22 HU (slot V)  
 Wellbore: Original Hole  
 Design: rev4

Local Co-ordinate Reference:  
 TVD Reference:  
 MD Reference:  
 North Reference:  
 Survey Calculation Method:

Well Breckenridge S-22 HU (slot V)  
 GL @ 1370.00ft  
 GL @ 1370.00ft  
 Grid  
 Minimum Curvature

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AUG 13 2021

WV Department of  
 Environmental Protection

Planned Survey

Measured Depth (ft)	Inclination (°)	Azimuth (°)	Vertical Depth (ft)	+N/-S (ft)	+E/-W (ft)	Map Northing (usft)	Map Easting (usft)	Latitude	Longitude
19,000.00	89.00	149.76	12,057.61	-4,723.20	5,642.56	14,460,413.11	1,750,921.10	39.81720119	-80.60646077
19,100.00	89.00	149.76	12,059.36	-4,809.58	5,682.94	14,460,326.73	1,750,971.54	39.81696337	-80.60628278
19,200.00	89.00	149.76	12,061.10	-4,895.96	5,743.30	14,460,240.36	1,751,021.90	39.81672556	-80.60610480
19,300.00	89.00	149.76	12,062.85	-4,982.33	5,793.66	14,460,153.96	1,751,072.25	39.81648774	-80.60592682
19,400.00	89.00	149.76	12,064.59	-5,068.71	5,844.02	14,460,067.60	1,751,122.61	39.81624992	-80.60574884
19,500.00	89.00	149.76	12,066.34	-5,155.09	5,894.38	14,459,981.23	1,751,172.97	39.81601210	-80.60557086
19,600.00	89.00	149.76	12,068.08	-5,241.46	5,944.73	14,459,894.85	1,751,223.33	39.81577429	-80.60539288
19,700.00	89.00	149.76	12,069.83	-5,327.84	5,995.09	14,459,808.47	1,751,273.69	39.81553647	-80.60521490
19,800.00	89.00	149.76	12,071.57	-5,414.22	6,045.45	14,459,722.10	1,751,324.05	39.81529865	-80.60503692
19,900.00	89.00	149.76	12,073.32	-5,500.59	6,095.81	14,459,635.72	1,751,374.41	39.81506083	-80.60485895
20,000.00	89.00	149.76	12,075.06	-5,586.97	6,146.17	14,459,549.35	1,751,424.77	39.81482301	-80.60468097
20,100.00	89.00	149.76	12,076.81	-5,673.35	6,196.53	14,459,462.97	1,751,475.13	39.81458519	-80.60450300
20,200.00	89.00	149.76	12,078.55	-5,759.72	6,246.89	14,459,376.59	1,751,525.48	39.81434737	-80.60432503
20,300.00	89.00	149.76	12,080.30	-5,846.10	6,297.25	14,459,290.22	1,751,575.84	39.81410955	-80.60414706
20,400.00	89.00	149.76	12,082.04	-5,932.48	6,347.61	14,459,203.84	1,751,626.20	39.81387173	-80.60396909
20,500.00	89.00	149.76	12,083.79	-6,018.85	6,397.97	14,459,117.46	1,751,676.56	39.81363391	-80.60379112
20,600.00	89.00	149.76	12,085.53	-6,105.23	6,448.32	14,459,031.09	1,751,726.92	39.81339609	-80.60361315
20,700.00	89.00	149.76	12,087.28	-6,191.61	6,498.68	14,458,944.71	1,751,777.28	39.81315827	-80.60343519
20,800.00	89.00	149.76	12,089.02	-6,277.98	6,549.04	14,458,858.33	1,751,827.64	39.81292044	-80.60325722
20,900.00	89.00	149.76	12,090.77	-6,364.36	6,599.40	14,458,771.96	1,751,878.00	39.81268262	-80.60307926
21,000.00	89.00	149.76	12,092.51	-6,450.74	6,649.76	14,458,685.58	1,751,928.35	39.81244480	-80.60290130
21,100.00	89.00	149.76	12,094.26	-6,537.11	6,700.12	14,458,599.20	1,751,978.71	39.81220696	-80.60272334
21,200.00	89.00	149.76	12,096.00	-6,623.49	6,750.48	14,458,512.83	1,752,029.07	39.81196916	-80.60254538
21,300.00	89.00	149.76	12,097.75	-6,709.87	6,800.84	14,458,426.45	1,752,079.43	39.81173133	-80.60236742
21,400.00	89.00	149.76	12,099.49	-6,796.25	6,851.20	14,458,340.07	1,752,129.79	39.81149351	-80.60218946
21,500.00	89.00	149.76	12,101.24	-6,882.62	6,901.55	14,458,253.70	1,752,180.15	39.81125569	-80.60201151
21,600.00	89.00	149.76	12,102.98	-6,969.00	6,951.91	14,458,167.32	1,752,230.51	39.81101786	-80.60183355
21,700.00	89.00	149.76	12,104.73	-7,055.38	7,002.27	14,458,080.94	1,752,280.87	39.81078004	-80.60165550
21,800.00	89.00	149.76	12,106.47	-7,141.75	7,052.63	14,457,994.57	1,752,331.23	39.81054221	-80.60147755
21,900.00	89.00	149.76	12,108.22	-7,228.13	7,102.99	14,457,908.19	1,752,381.58	39.81030439	-80.60129970
22,000.00	89.00	149.76	12,109.96	-7,314.51	7,153.35	14,457,821.81	1,752,431.94	39.81006656	-80.60112175
22,100.00	89.00	149.76	12,111.71	-7,400.88	7,203.71	14,457,735.44	1,752,482.30	39.80982874	-80.60094380
22,200.00	89.00	149.76	12,113.45	-7,487.26	7,254.07	14,457,649.06	1,752,532.66	39.80959091	-80.60076585
22,300.00	89.00	149.76	12,115.20	-7,573.64	7,304.43	14,457,562.68	1,752,583.02	39.80935309	-80.60058791
22,400.00	89.00	149.76	12,116.94	-7,660.01	7,354.79	14,457,476.31	1,752,633.38	39.80911526	-80.60040996
22,500.00	89.00	149.76	12,118.69	-7,746.39	7,405.14	14,457,389.93	1,752,683.74	39.80887743	-80.60023202
22,600.00	89.00	149.76	12,120.43	-7,832.77	7,455.50	14,457,303.58	1,752,734.10	39.80863961	-80.60005407
22,700.00	89.00	149.76	12,122.17	-7,919.14	7,505.85	14,457,217.13	1,752,784.45	39.80840178	-80.59987613
22,804.61	89.00	149.76	12,124.00	-8,009.50	7,556.21	14,457,130.72	1,752,834.81	39.80816390	-80.59969800

PBHL/TD 22804.60 MD 12124.00 TVD



Planning Report - Geographic

Database:	DB_Dec2220_v16	Local Co-ordinate Reference:	Well Breckenridge S-22 HU (slot V)
Company:	Tug Hill Operating LLC	TVD Reference:	CL @ 1370.00ft
Project:	Marshall County, West Virginia	MD Reference:	CL @ 1370.00ft
Site:	Breckenridge (1 row)	North Reference:	Grid
Well:	Breckenridge S-22 HU (slot V)	Survey Calculation Method:	Minimum Curvature
Wellbore:	Original Hole		
Design:	rev4		

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Design Targets									
Target Name	Dip Angle	Dip Dir.	TVD	+N/-S	+E/-W	Northing	Easting	Latitude	Longitude
- hit/miss target	(°)	(°)	(ft)	(ft)	(ft)	(usft)	(usft)		
- Shape									
Breckenridge S-22HU LI - plan misses target center by 43.10ft at 12743.14ft MD (11948.43 TVD, 681.26 N, 2491.69 E) - Point	0.00	0.00	11,948.00	702.97	2,528.93	14,465,839.27	1,747,807.54	39.83213967	-80.61746650
Breckenridge S-22HU LI - plan misses target center by 0.09ft at 12717.96ft MD (11948.00 TVD, 703.01 N, 2479.01 E) - Point	0.00	0.00	11,948.00	702.97	2,478.93	14,465,839.27	1,747,757.54	39.83214026	-80.61764461
Breckenridge S-22HU BI - plan hits target center - Point	0.00	0.00	12,124.00	-8,009.50	7,558.54	14,457,126.82	1,752,837.13	39.80815300	-80.59989000

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Casing Points					
Measured Depth	Vertical Depth	Name	Casing Diameter	Hole Diameter	
(ft)	(ft)		(")	(")	
22,812.25		20" Casing	20	24	

Plan Annotations					
Measured Depth	Vertical Depth	Local Coordinates		Comment	
(ft)	(ft)	+N/-S	+E/-W		
		(ft)	(ft)		
2,900.00	2,900.00	0.00	0.00	KOP Begin 2°/100' build	
3,662.50	3,653.53	50.44	87.36	Begin 15.25° tangent	
6,612.86	6,500.00	438.46	759.43		
7,234.76	7,100.00	520.25	901.09	Begin 2°/100' build/turn	
7,359.18	7,219.82	539.28	929.50	Begin 16.72° tangent	
11,373.05	11,063.87	1,239.12	1,847.71	Begin 6°/100' build/turn	
12,197.93	11,768.35	1,082.36	2,191.64	Begin 6°/100' build/turn	
12,717.99	11,948.00	702.99	2,479.03	Begin 89.00° lateral	
22,804.61	12,124.00	-8,009.50	7,558.54	PBHL/TD 22804.60 MD 12124.00 TVD	

## Area of Review

### Sources of information to Support 35CSR8 - 5.11: 9.3 et seq.

Description of process to identify potential pathways for well communication during hydraulic fracturing activities.

#### Data Sources Reviewed:

1. Enverus and RS Energy Group Well Data service: Public nationwide data service that pulls directly from State agency Oil and Gas databases
2. Farm Maps
3. Topo Maps: Recent and older (contact WVGES)
4. Check with DPS

Contacted Adam Picard 724-485-9331, [apicard@dpslandservices.com](mailto:apicard@dpslandservices.com), DPS GIS (04/7/2021) to have him make maps of the wellbores with his information. DPS utilizes WVGES maps for their mapping seems it is the best publicly available. See attached map he provided.

#### Request maps for:

1. Wellbore with IHS All Wells Layer
2. Map with Farm lines overlain and any well spots identified on Farm Maps
3. More recent (1970s vintage) topos and older topos

#### Discussion with Phil Dinterman WVGES GIS Department (7/15/2016)

- WVGES has plotted every well spot they have access to and are aware of with that contains a coordinate. 30000, 70000, and 90000 series wells are available via the WVGES online map. Some locations aren't great due to vintage and manipulation of maps through time
- 30000 series – any well drilled prior to 1929 – APIs were not assigned to original wells
- 70000 series – Well spots pulled from old Farm line maps that the WVGES has access to
- 90000 series – Any sources that the WVGES has access that shows a well spot but has no additional supporting information. DEP does not have 90000 series on their maps.
- There can be duplication between wells in the 3 series
- Phil indicated that other Operators are providing a screenshot of the WVGES map with their planned well and using that for permits

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**Wells within 500' Buffer**

Note: Well spots depicted on Area of Review map are derived from State held coordinates. The spots may differ from those depicted on the Well Plat because the Plat locations represent actual field surveyed locations. Please refer to the Plat for surveyed well spots.

API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705101082	Consolidation Coal Co.	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well. Well is plugged.	Well was plugged 7/3/2008.
4705170164	Hope Natural Gas Company	2374' TVD	Big Injun	unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation.	
4705102346	Tug Hill Operating, LLC	7115' TVD (proposed)	none	none	No, this is a proposed well in the Marcellus. Once completed the well will not be deep enough to be within the expected fracture propagation from a Point Pleasant stimulation.	A permitted well on the pad that is not drilled or perforated.
4705170510	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.	State records are incomplete.

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API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705100011	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well. Well is plugged.	Well was plugged in 1951.
4705101070	Consolidation Coal Co.	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well. Well is plugged.	Well was plugged 1/14/2009
4705130293	The Tri-State Pipe Company	3134' TVD	Fifth Sand	unknown	No, the well is not deep enough to be within the expected fracture propagation from a Point Pleasant stimulation. Well is plugged.	Well was plugged 4/14/1949.
4705101105	Consolidation Coal Co.	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well. Well is plugged.	Well was plugged 9/14/2008.
4705170472	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.	State records are incomplete.

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API Number	Operator Name	Total Depth	Perforated Fms	Producing zones not perforated	Is this well "known or reasonably expected to penetrate a depth that could be within the range of Fracture propagation"? 1000' is max limit I would assign to wells that might be within in range of fracture propagation	Comments
4705170468	unknown	unknown	unknown	unknown	Unknown but unlikely. The well likely represents an old shallow well that is too shallow to be affected by fracturing in the planned Point Pleasant well.	State records are incomplete.

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WV Geological &amp; Economic Survey:

Well: County = 51 Permit = 01082

Report Time: Tuesday, April 13, 2021 10:03:30 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101082	Marshall	1082	Cameron	Glen Easton	Cameron	39.829496	-80.627436	531880.9	4408899.7

There is no Bottom Hole Location data for this well

## Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101082	7/3/2008	Plugging	Completed	J Richard Wayt		M-1334				Consolidation Coal Co.			

## Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BE	G_
4705101082	7/3/2008	6/18/2008	1262	Ground Level				unclassified	unclassified	not available	unknown	unknown						

There is no Pay data for this well

There is no Production Gas data for this well

There is no Production Oil data for this well \*\* some operators may have reported NGL under Oil

There is no Production NGL data for this well \*\* some operators may have reported NGL under Oil

There is no Production Water data for this well

## Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705101082	Plugging	Pittsburgh coal	Well Record	946	Reasonable	5	Reasonable	1262	Ground Level

There is no Wireline (E-Log) data for this well

## Plugging Information:

API	PLG_DT	DEPTH_PBT
4705101082	7/3/2008	0

There is no Sample data for this well

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WV Geological & Economic Survey:

**Well: County = 51 Permit = 70164**

Report Time: Tuesday, April 13, 2021 10:04:50 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170164	Marshall	70164	Liberty	Glen Easton	Cameron	39.829496	-80.626308	531977.5	4408900.1

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_P
4705170164	-/-		Original Loc Completed	Elijah Williams	1	547				Hope Natural Gas Company			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AI
4705170164	-/-	-/-	1420	Barometer	Big Injun (undiff)	Big Injun (undiff)		unclassified	unclassified	not available	unknown	unknown	2374		2374			

There is no Pay data for this well

There is no Production Gas data for this well

There is no Production Oil data for this well \*\* some operators may have reported NGL under Oil

There is no Production NGL data for this well \*\* some operators may have reported NGL under Oil

There is no Production Water data for this well

There is no Stratigraphy data for this well

There is no Wireline (E-Log) data for this well

There is no Plugging data for this well

There is no Sample data for this well

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WV Geological &amp; Economic Survey

Well: County = 51 Permit = 02346

Report Time: Tuesday, April 13, 2021 10:05:07 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705102346	Marshall	2346	Cameron	Glen Easton	Cameron	39.830284	-80.626735	531940.6	4408987.3

## Bottom Hole Location Information:

API	EP_FLAG	UTME	UTMN	LON_DD	LAT_DD
4705102346	1 As Proposed	532233.1	4408596.4	-80.623336	39.826751

## Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM
4705102346	-/-	Dvtd Wrkd Ovr	Permitted	CNX Land LLC		S-10HM	Breckenridge		Hasans Ventures et al	Tug Hill Operating, LLC	7115	Marcellus Fm

## Completion Information:

API	CMP_DT	SPUD_DT	ELEV DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT	O_BEI
4705102346	-/-	-/-	1380 Ground Level															

There is no Pay data for this well

There is no Production Gas data for this well

There is no Production Oil data for this well \*\* some operators may have reported NGL under Oil

There is no Production NGL data for this well \*\* some operators may have reported NGL under Oil

There is no Production Water data for this well

There is no Stratigraphy data for this well

There is no Wireline (E-Log) data for this well

There is no Plugging data for this well

There is no Sample data for this well

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WV Geological & Economic Survey:

Well: County = 51 Permit = 70510

Report Time: Tuesday, April 13, 2021 11:38:28 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705170510	Marshall	70510	Cameron	Cameron	Cameron	39.821221	-80.60927	533439.5	4407987.8

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170510	--		unknown	Prpty Map William D Phillips		1					-----	unknown	-----

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEFO	G_AFT
4705170510	--	--						unclassified	unclassified	not available	unknown	unknown						

There is no Pay data for this well

There is no Production Gas data for this well

There is no Production Oil data for this well \*\* some operators may have reported NGL under Oil

There is no Production NGL data for this well \*\* some operators may have reported NGL under Oil

There is no Production Water data for this well

There is no Stratigraphy data for this well

There is no Wireline (E-Log) data for this well

There is no Plugging data for this well

There is no Sample data for this well

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WV Geological & Economic Survey:

Well: County = 51 Permit = 00011

Report Time: Tuesday, April 13, 2021 11:39:03 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705100011	Marshall	11	Liberty	Cameron	Cameron	39.813257	-80.602878	533990.4	4407106.3

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PR
4705100011	-/-		Original Loc	Completed	Belle Clarke		1		OP=Marshall-Preston Oil	Oper in Min. owner fld. no code assgn(Orphan well proj)		

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF
4705100011	-/-	-/-			Cameron-Garner			unclassified	unclassified	not available	unknown	unknown			0		0

There is no Pay data for this well

There is no Production Gas data for this well

There is no Production Oil data for this well \*\* some operators may have reported NGL under Oil

There is no Production NGL data for this well \*\* some operators may have reported NGL under Oil

There is no Production Water data for this well

There is no Stratigraphy data for this well

There is no Wireline (E-Log) data for this well

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705100011	-/-1951	0

There is no Sample data for this well

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WV Geological & Economic Survey

Well: County = 51 Permit = 01070

Report Time: Tuesday, April 13, 2021 11:39:28 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101070	Marshall	1070	Liberly	Cameron	Cameron	39.813837	-80.605699	533748.7	4407169.6

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST
4705101070	1/14/2009	Plugging	Completed	William & Nancy Parsons		M-439				Consolidation Coal Co.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEFG
4705101070	1/14/2009	1/5/2009	1195	Ground Level	Cameron-Garner						Rotary						

Comment: 1/14/2009 River Operations

There is no Pay data for this well

There is no Production Gas data for this well

There is no Production Oil data for this well \*\* some operators may have reported NGL under Oil

There is no Production NGL data for this well \*\* some operators may have reported NGL under Oil

There is no Production Water data for this well

There is no Stratigraphy data for this well

There is no Wireline (E-Log) data for this well

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705101070	1/14/2009	0

There is no Sample data for this well

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WV Geological & Economic Survey:

Well: County = 51 Permit = 30293

Report Time: Tuesday, April 13, 2021 11:39:48 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LONG_DD	UTME	UTMN
4705130293	Marshall	30293	Liberty	Cameron	Cameron	39.814852	-80.604759	533828.7	4407282.6

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TF
4705130293	6/16/1919	Original Loc	Completed	W E McMardle	1		E V Bartlett		State of WV	Tri-State Pipe Company, The			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW
4705130293	6/16/1919	--	1201	Ground Level	Cameron-Garner	UDev undfBer/LoHURN	Fifth	Development Well	Development Well	Gas	Cable Tool	unknown	3134		

Pay/Show/Water Information:

API	CMP_DT	ACTIVITY	PRODUCT	SECTION	DEPTH_TOP	FM_TOP	DEPTH_BOT	FM_BOT	G_BEF	G_AFT	O_BEF	O_AFT	WATER_QNTY
4705130293	6/16/1919	Pay	Gas	Vertical			3075	Fifth	0	0			

There is no Production Gas data for this well

There is no Production Oil data for this well \*\*\* some operators may have reported NGL under Oil

There is no Production NGL data for this well \*\* some operators may have reported NGL under Oil

There is no Production Water data for this well

Stratigraphy Information:

API	SUFFIX	FM	FM_QUALITY	DEPTH_TOP	DEPTH_QUALITY	THICKNESS	THICKNESS_QUALITY	ELEV	DATUM
4705130293	Original Loc	unidentified coal	Well Record	510	Reasonable	2	Reasonable	1201	Ground Level
4705130293	Original Loc	Pittsburgh coal	Well Record	937	Reasonable	8	Reasonable	1201	Ground Level
4705130293	Original Loc	Mahonig Ss/Big Dunk	Well Record	1410	Reasonable	49	Reasonable	1201	Ground Level
4705130293	Original Loc	Salt Sands (undiff)	Well Record	1800	Reasonable	142	Reasonable	1201	Ground Level
4705130293	Original Loc	Little Lime	Well Record	1975	Reasonable	5	Reasonable	1201	Ground Level
4705130293	Original Loc	Pencil Cave	Well Record	1980	Reasonable	5	Reasonable	1201	Ground Level
4705130293	Original Loc	Big Injun (undiff)	Well Record	2040	Reasonable	250	Reasonable	1201	Ground Level
4705130293	Original Loc	Gordon	Well Record	2927	Reasonable	23	Reasonable	1201	Ground Level
4705130293	Original Loc	Fourth	Well Record	2993	Reasonable	7	Reasonable	1201	Ground Level
4705130293	Original Loc	Fifth	Well Record	3072	Reasonable	6	Reasonable	1201	Ground Level

There is no Wireline (E-Log) data for this well

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705130293	4/14/1949	0

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WV Geological & Economic Survey:

Well: County = 51 Permit = 01105

Report Time: Tuesday, April 13, 2021 11:41:44 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_15	LAT_DD	LON_DD	UTME	UTMN
4705101105	Marshall	1105	Liberty	Cameron	Cameron	39.811082	-80.603065	533975.5	4406864.8

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705101105	9/15/2008	Plugging	Completed	McElroy Coal Co		M-440				Consolidation Coal Co.			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G
4705101105	9/15/2008	8/7/2008	1364	Ground Level	Cameron-Garner			unclassified	unclassified	not available	unknown	unknown					

Comment: 9/15/2008 Ohio Valley Operations. Pittsburgh Coal 1114-1122.

There is no Pay data for this well

There is no Production Gas data for this well

There is no Production Oil data for this well \*\* some operators may have reported NGL under Oil

There is no Production NGL data for this well \*\* some operators may have reported NGL under Oil

There is no Production Water data for this well

There is no Stratigraphy data for this well

There is no Wireline (E-Log) data for this well

Plugging Information:

API	PLG_DT	DEPTH_PBT
4705101105	9/15/2008	0

There is no Sample data for this well

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WV Geological & Economic Survey

Well: County = 51 Permit = 70472

Report Time: Tuesday, April 13, 2021 11:42:04 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LON_DD	UTME	UTMN
4705170472	Marshall	70472	Liberty	Cameron	Cameron	39.810625	-80.601374	534120.5	4406814.8

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170472	-/-		unknown	Prpty Map Louis E Chambers						----- unknown -----			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEF	G_AFT
4705170472	-/-	-/-						unclassified	unclassified	not available	unknown	unknown						

There is no Pay data for this well

There is no Production Gas data for this well

There is no Production Oil data for this well \*\* some operators may have reported NGL under Oil

There is no Production NGL data for this well \*\* some operators may have reported NGL under Oil

There is no Production Water data for this well

There is no Stratigraphy data for this well

There is no Wireline (E-Log) data for this well

There is no Plugging data for this well

There is no Sample data for this well

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WV Geological & Economic Survey

Well: County = 51 Permit = 70468

Report Time: Tuesday, April 13, 2021 11:42:21 AM

Location Information: [View Map](#)

API	COUNTY	PERMIT	TAX_DISTRICT	QUAD_75	QUAD_16	LAT_DD	LON_DD	UTME	UTMN
4705170468	Marshall	70468	Liberly	Cameron	Cameron	39.806707	-80.59987	534251.2	4406380.5

There is no Bottom Hole Location data for this well

Owner Information:

API	CMP_DT	SUFFIX	STATUS	SURFACE_OWNER	WELL_NUM	CO_NUM	LEASE	LEASE_NUM	MINERAL_OWN	OPERATOR_AT_COMPLETION	PROP_VD	PROP_TRGT_FM	TFM_EST_PR
4705170468	-/-	unknown	Prpty Map	Amos Chambers	1	1082				unknown			

Completion Information:

API	CMP_DT	SPUD_DT	ELEV	DATUM	FIELD	DEEPEST_FM	DEEPEST_FMT	INITIAL_CLASS	FINAL_CLASS	TYPE	RIG	CMP_MTHD	TVD	TMD	NEW_FTG	KOD	G_BEFO	G_AFTO
4705170468	-/-	-/-						unclassified	unclassified	not available	unknown	unknown						

There is no Pay data for this well

There is no Production Gas data for this well

There is no Production Oil data for this well \*\* some operators may have reported NGL under Oil

There is no Production NGL data for this well \*\* some operators may have reported NGL under Oil

There is no Production Water data for this well

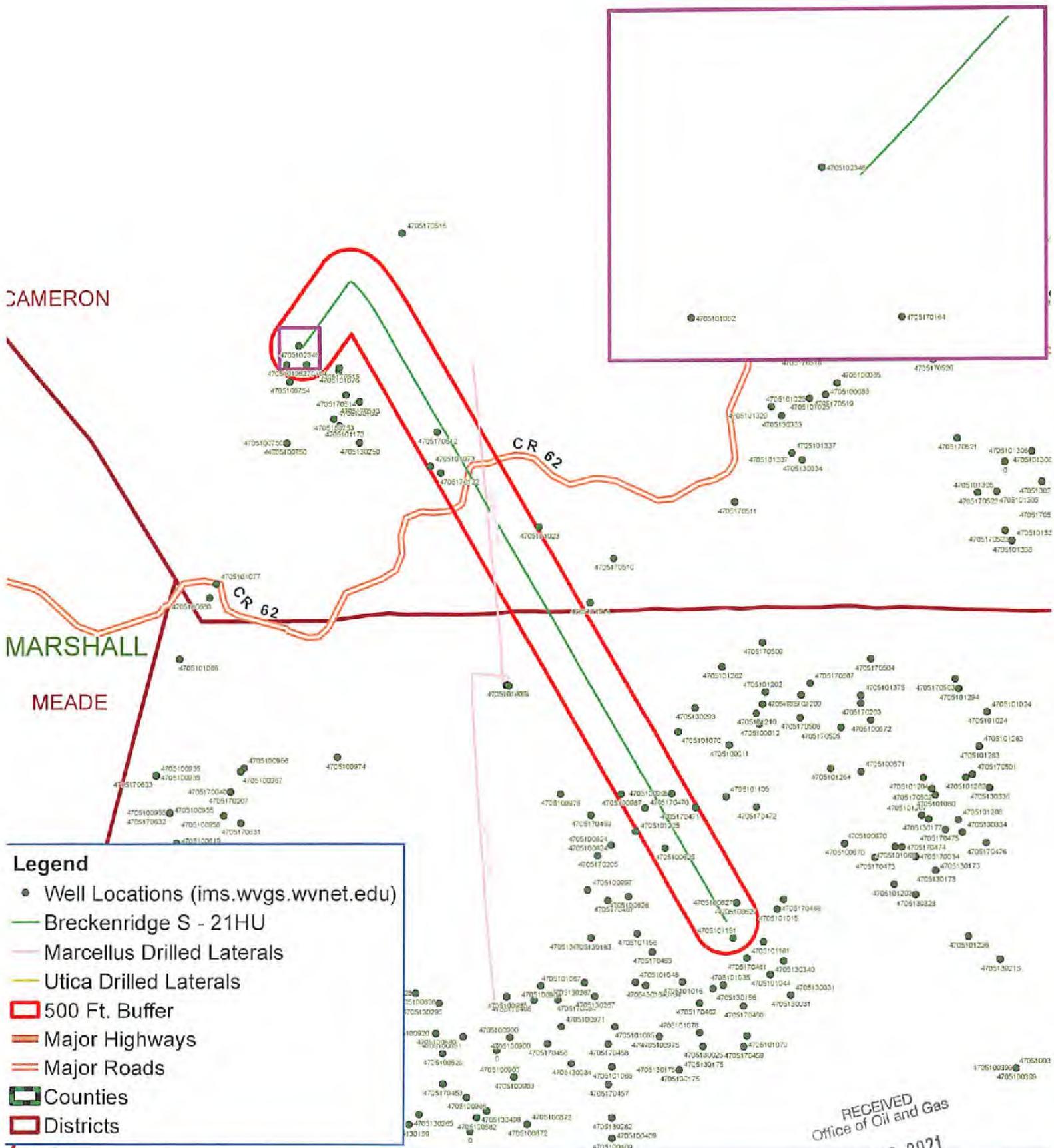
There is no Stratigraphy data for this well

There is no Wireline (E-Log) data for this well

There is no Plugging data for this well

There is no Sample data for this well

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**Legend**

- Well Locations (ims.wvgs.wvnet.edu)
- Breckenridge S - 21HU
- Marcellus Drilled Laterals
- Utica Drilled Laterals
- 500 Ft. Buffer
- Major Highways
- Major Roads
- ▭ Counties
- ▭ Districts

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# Breckenridge S - 21HU Cameron District Marshall County, WV



Notes:  
All locations are approximate and are for visualization purposes only.



Map Created: April 7, 2021

Map Prepared by:  
**EPS**  
LAND SERVICES  
11/19/2021

WW-9  
(4/16)

API Number 47 - 051 - \_\_\_\_\_  
Operator's Well No. Breckenridge S-22HU

STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS

FLUIDS/ CUTTINGS DISPOSAL & RECLAMATION PLAN

Operator Name Tug Hill Operating, LLC OP Code 494510851

Watershed (HUC 10) Grave Creek & Laurel Run Quadrangle Glen Easton 7.5'

Do you anticipate using more than 5,000 bbls of water to complete the proposed well work? Yes  No

Will a pit be used? Yes  No

If so, please describe anticipated pit waste: AST Tanks with proper containment will be used for staging fresh water for frac and flow back water

Will a synthetic liner be used in the pit? Yes  No  If so, what ml.? AST Tanks will be used with proper contain

Proposed Disposal Method For Treated Pit Wastes:

- Land Application
- Underground Injection ( UIC Permit Number UIC 2459, UIC 965, UIC 359, UIC 2D0732540, UIC 2D0732523 )
- Reuse (at API Number \_\_\_\_\_)
- Off Site Disposal (Supply form WW-9 for disposal location)
- Other (Explain \_\_\_\_\_)

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Will closed loop system be used? If so, describe: Yes - For Vertical and Horizontal Drilling

Drilling medium anticipated for this well (vertical and horizontal)? Air, freshwater, oil based, etc. Air for vertical / Oil for Horizontal

-If oil based, what type? Synthetic, petroleum, etc. Synthetic Oil Base

Additives to be used in drilling medium? Barite for weight

Drill cuttings disposal method? Leave in pit, landfill, removed offsite, etc. All drill cuttings to be disposed of in a Landfill

-If left in pit and plan to solidify what medium will be used? (cement, lime, sawdust) N/A

-Landfill or offsite name/permit number? Wetzel County Sanitary Landfill (SWF-1021 / WV0109185) and Westmoreland Sanitary Landfill, LLC (SAN1405 / PA DEP EC#1386426)

Permittee shall provide written notice to the Office of Oil and Gas of any load of drill cuttings or associated waste rejected at any West Virginia solid waste facility. The notice shall be provided within 24 hours of rejection and the permittee shall also disclose where it was properly disposed.

I certify that I understand and agree to the terms and conditions of the GENERAL WATER POLLUTION PERMIT issued on August 1, 2005, by the Office of Oil and Gas of the West Virginia Department of Environmental Protection. I understand that the provisions of the permit are enforceable by law. Violations of any term or condition of the general permit and/or other applicable law or regulation can lead to enforcement action.

I certify under penalty of law that I have personally examined and am familiar with the information submitted on this application form and all attachments thereto and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine or imprisonment.

Company Official Signature James Pancake  
Company Official (Typed Name) Jim Pancake  
Company Official Title Vice President - Geosciences

Subscribed and sworn before me this 8th day of April, 20 21

Susanne Deliere Notary Public

My commission expires 1/15/2025

Commonwealth of Pennsylvania - Notary Seal  
Susanne Deliere, Notary Public  
Washington County  
My commission expires January 15, 2025  
Commission number 1382332  
Member, Pennsylvania Association of Notaries

**Tug Hill Operating, LLC**

Proposed Revegetation Treatment: Acres Disturbed 45.40 Prevegetation pH 6.0

Lime 3 Tons/acre or to correct to pH 6.5

Fertilizer type 10-20-20

Fertilizer amount 500 lbs/acre

Mulch 2.5 Tons/acre

**Seed Mixtures**

Temporary		Permanent	
Seed Type	lbs/acre	Seed Type	lbs/acre
Annual Ryegrass	40	Orchard Grass	12
Spring Oats	96	Ladino	3
		White Clover	2

**Attach:**

Maps(s) of road, location, pit and proposed area for land application (unless engineered plans including this info have been provided). If water from the pit will be land applied, include dimensions (L x W x D) of the pit, and dimensions (L x W), and area in acreage, of the land application area.

Photocopied section of involved 7.5' topographic sheet.

Plan Approved by: *Doug Stehly*

Comments: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

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Title: Oil and Gas Inspector Date: 6-17-21

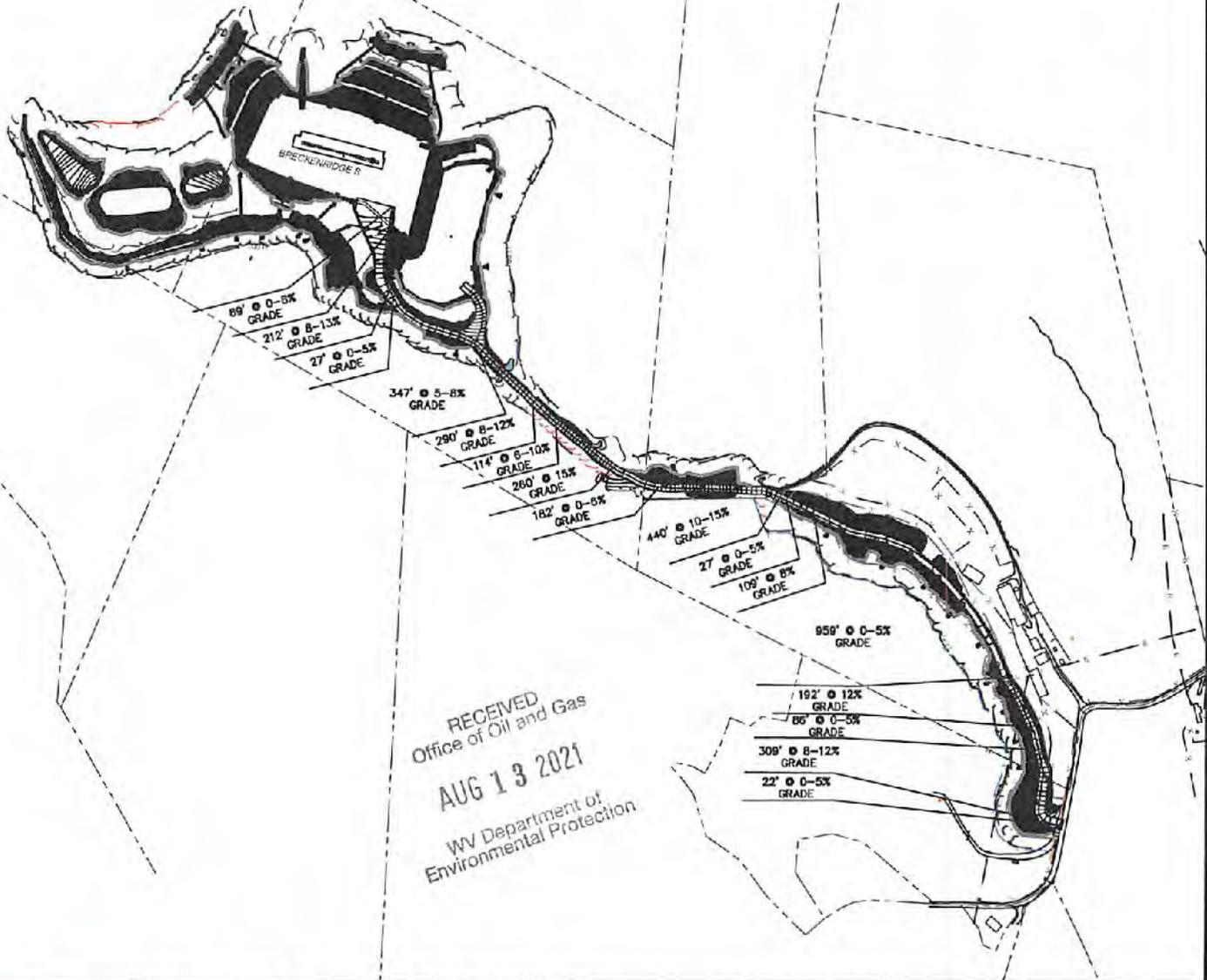
Field Reviewed? (  ) Yes (  ) No

# PROPOSED BRECKENRIDGE S - 22HU



**NOTES:**

1. DRAWING NOT TO SCALE
2. REFERENCE IS HEREBY MADE TO THE WV D.E.P. OFFICE OF OIL & GAS, "EROSION AND SEDIMENT CONTROL FIELD MANUAL" FOR REQUIREMENTS AND BMPs FOR AVERAGE FIELD CONDITIONS CONCERNING THE MAINTENANCE OF EXISTING ROADS AND THE CONSTRUCTION OF PROPOSED ROADS. FIELD CONDITIONS MAY REQUIRE VARIANCE FROM THESE GUIDELINES AND THE EARTHWORK CONTRACTOR IS RESPONSIBLE FOR NOTIFICATION TO THE INSPECTOR AND THE OPERATOR SHOULD THESE CONDITIONS OCCUR.
3. ENTRANCES ONTO PUBLIC ROADS SHALL BE CONSTRUCTED OR MAINTAINED IN ACCORDANCE WITH WV D.O.T. REGULATIONS. ADDITIONAL PERMITS MAY BE REQUIRED.
4. SEE BRECKENRIDGE N SITE PLAN PREPARED BY KELLEY SURVEYING, FOR COMPLETE CONSTRUCTION & EROSION AND SEDIMENT CONTROL DETAILS.



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12 VARNOR Drive | P.O. Box 150 | Glenville, WV 26351 | 304.452.9234  
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.1803  
264 East Oakley Street | Beckley, WV 26201 | 304.253.5256  
sivw.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
COUNTY	DISTRICT		
MARSHALL	CAMERON		
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	9026	04-08-21	NONE



**TUG HILL  
OPERATING**  
11/19/2021

4705102401

# Breckenridge Coal Exhibit



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**TUG HILL**  
**OPERATING**

*B.S. 8-12-21*

## **Well Site Safety Plan**

### **Part A – Site Specific Data and Figures**

**Well Name: Breckenridge S-22HU**

**Pad Name: Breckenridge**

**County: Marshall**

**UTM (meters), NAD83, Zone 17**

**Northing: 4,408,982.36**

**Easting: 531,961.98**

#### **KEY CONTACT FOR WELL SITE SAFETY PLAN DEVELOPMENT AND MAINTENANCE**

**Jerry V. DeRosa, Director EH&S Affairs**

**(724) 338-2029 (office)**

**(412) 736-5767 (cellular)**

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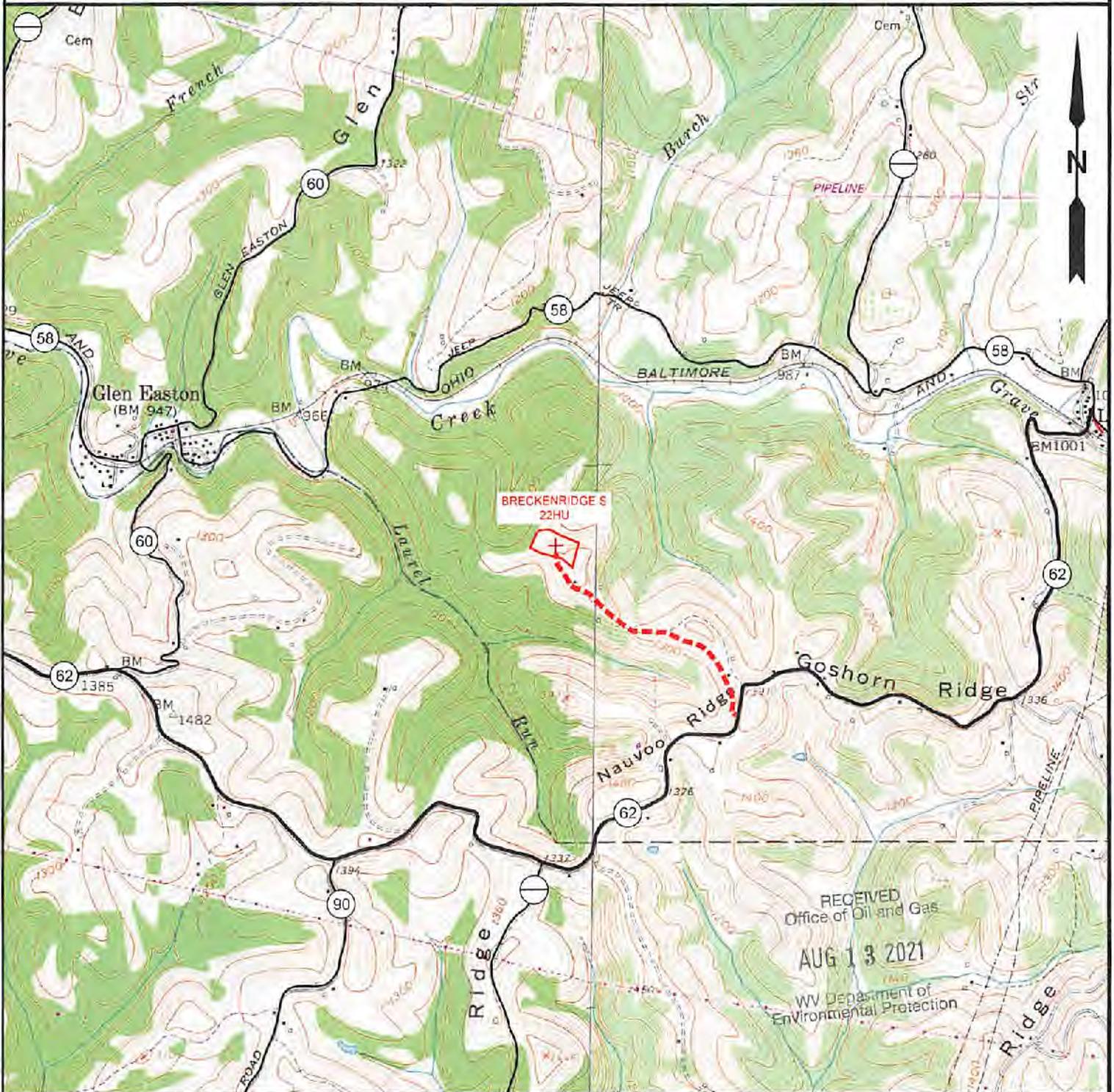
WV Department of  
Environmental Protection

**24-HOUR EMERGENCY PHONE NUMBER**

**(800) 921-9745**

11/19/2021

# PROPOSED BRECKENRIDGE S - 22HU



NOTE: CLOSEST WATER PURVEYOR  
CITY OF CAMERON - FRANK WALKER RESERVOIR  
CAMDEN, WV

LAT: 39.829865  
LON: -80.573724  
LOCATED: S 88°42'19" E AT 14,928.72' FROM THE CENTER OF BRECKENRIDGE N WELL PAD LOCATION.



12 Vanhorn Drive | P.O. Box 180 | Glenville, WV 26351 | 304.462.5634  
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952  
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5396  
slswv.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR:	
COUNTY	DISTRICT	TUG HILL OPERATING, LLC	
MARSHALL	CAMERON	390 SOUTHPOINTE BLVD	
DRAWN BY		DATE	SCALE
K.G.M.		04/08/2021	1" = 2000'



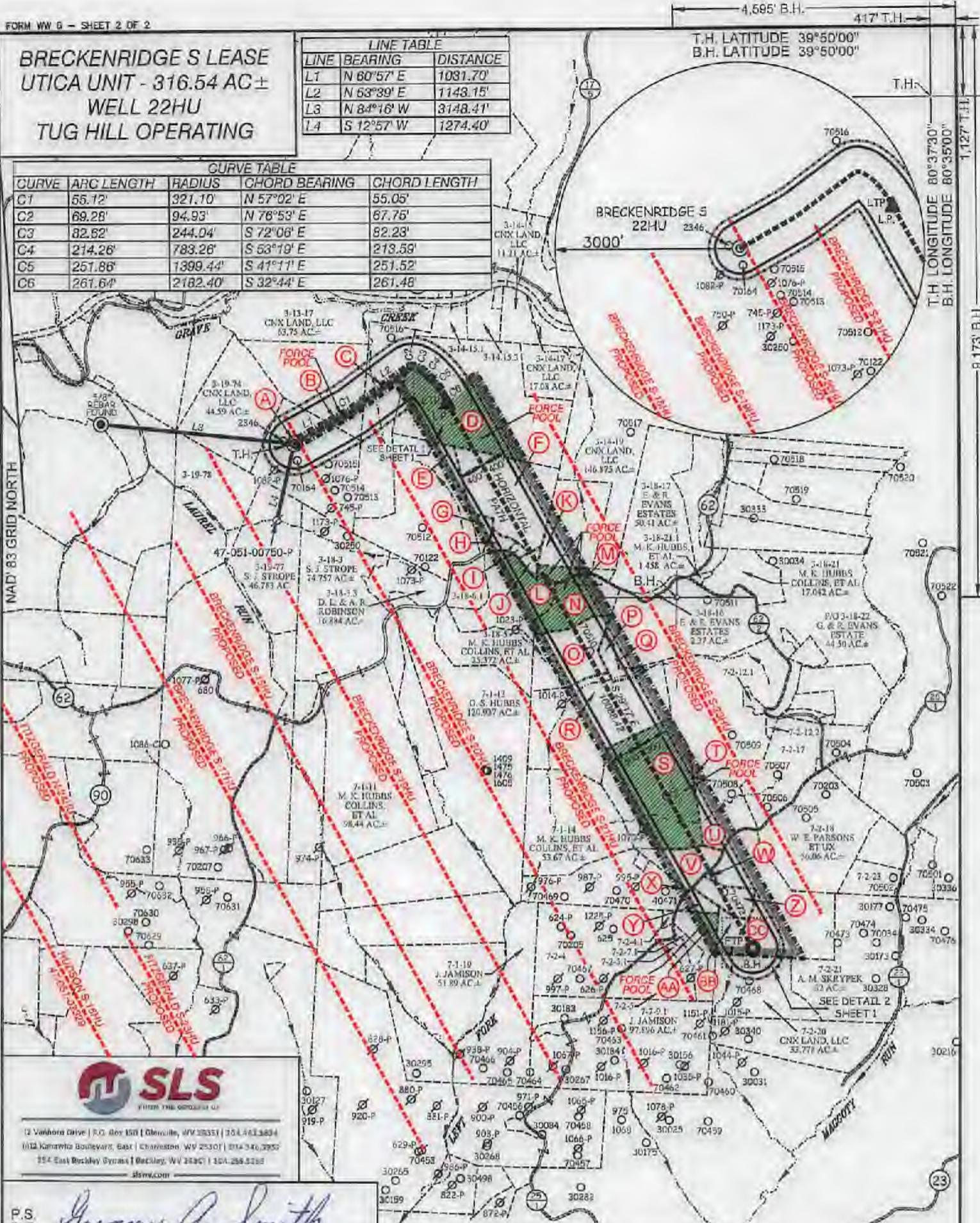
**TUG HILL**  
OPERATING  
11/19/2021



**BRECKENRIDGE S LEASE  
UTICA UNIT - 316.54 AC ±  
WELL 22HU  
TUG HILL OPERATING**

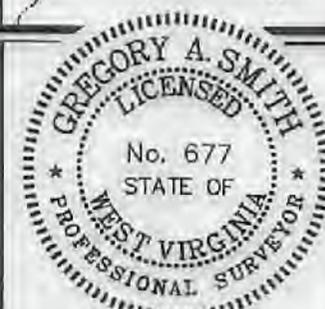
LINE TABLE		
LINE	BEARING	DISTANCE
L1	N 60°57' E	1031.70'
L2	N 63°39' E	1143.15'
L3	N 84°16' W	3148.41'
L4	S 12°57' W	1274.40'

CURVE TABLE				
CURVE	ARC LENGTH	RADIUS	CHORD BEARING	CHORD LENGTH
C1	55.12'	321.10'	N 57°02' E	55.05'
C2	69.28'	94.93'	N 76°59' E	67.76'
C3	82.52'	244.04'	S 72°08' E	82.23'
C4	214.26'	783.26'	S 53°10' E	213.59'
C5	251.86'	1399.44'	S 41°11' E	251.52'
C6	261.64'	2182.40'	S 32°44' E	261.48'



12 Vainford Drive | P.O. Box 158 | Glenville, WV 26035 | 204.463.8804  
 1112 Kanawha Boulevard, East | Charleston, WV 25301 | 204.346.2952  
 254 East Beckley Express | Beckley, WV 26801 | 204.256.5265  
 slsinc.com

P.S. 677 *Gregory A. Smith*



(+) DENOTES LOCATION OF WELL ON UNITED STATES TOPOGRAPHIC MAPS.

**LEGEND**

- EXTERIOR UNIT BOUNDARY
- INTERIOR LEASE BOUNDARY
- SURFACE LINE
- PROPOSED UTICA
- WELL LATERAL
- 400' OFFSET LINE
- 500' OFFSET LINE
- TIE LINE
- CREEK
- ROAD
- FORCE POOL TRACT
- PROPOSED FIRST TAKE POINT
- PROPOSED LAST TAKE POINT
- COUNTY ROUTE
- PROPOSED WELL
- EXISTING WELL
- PERMITTED WELL
- SURFACE OWNER (SEE TABLE)
- LEASE # (SEE ADDITIONAL SHEETS)

(S.P.C. NORTH ZONE) (UTM(M) ZONE 17 NORTH)  
 NAD'83 S.P.C. (FT) N. 485,498.73 E. 1,652,145.46  
 NAD'83 GEO. LAT. (N) 36.830289 LONG. (W) 80.528485  
 NAD'83 UTM (M) N. 4,408,882.36 E. 531,981.98  
**LANDING POINT**  
 NAD'83 S.P.C. (FT) N. 467,160.4 E. 1,654,636.7  
 NAD'83 GEO. LAT. (N) 39.832140 LONG. (W) 80.517644  
 NAD'83 UTM (M) N. 4,409,196.8 E. 532,717.6  
**BOTTOM HOLE**  
 NAD'83 S.P.C. (FT) N. 478,361.3 E. 1,659,571.5  
 NAD'83 GEO. LAT. (N) 39.808153 LONG. (W) 80.589690  
 NAD'83 UTM (M) N. 4,406,541.1 E. 534,265.6

SCALE 1" = 2000' FILE NO. 9028P22HUR2.dwg  
**BRECKENRIDGE S-22HU-REV4**  
 DATE JULY 15, 20 21  
 REVISED AUGUST 25, NOVEMBER 8, 20 21  
 OPERATORS WELL NO. BRECKENRIDGE S-22HU  
 API WELL NO. 47-051-02401  
 STATE COUNTY PERMIT

STATE OF WEST VIRGINIA  
 DIVISION OF ENVIRONMENTAL PROTECTION  
 OFFICE OF OIL AND GAS



11/19/2021

WELL OPERATOR TUG HILL OPERATING, LLC  
 ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500 FORT WORTH, TX 76107  
 DESIGNATED AGENT DARREN BROWN  
 ADDRESS 5098 WASHINGTON ST. W, STE 407 CHARLESTON, WV 25313-1561

**BRECKENRIDGE S LEASE  
UTICA UNIT - 316.54 AC±  
WELL 22HU  
TUG HILL OPERATING**



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26031 | 304.462.5934  
1412 Kanawha Boulevard, East | Charleston, WV 25301 | 304.346.3952  
254 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296  
slswv.com

NO.	Lease ID	Parcel	Tag	Grantor, Lessor, Etc.	Deed Book/Page
✓ 1	10*31241	3-19-76	A	JAMES R WAYT, ET AL	729 40
✓ 2	**FORCE POOL**	3-19-75	B	KATHERINE ZOGG OLIVER	663 449
✓ 3	10*17925	3-18-1	C	BOUNTY MINERALS LLC	928 393
✓ 4	**FORCE POOL**	3-18-18	D	KEVIN R. EVANS	1008 561
✓ 5	10*17925	3-18-2	E	BOUNTY MINERALS LLC	928 393
✓ 6	10*17925	3-18-8	F	BOUNTY MINERALS LLC	928 393
✓ 7	10*17925	3-18-7	G	BOUNTY MINERALS LLC	928 393
✓ 8	10*17925	3-18-8.2	H	BOUNTY MINERALS LLC	928 393
✓ 9	10*17925	3-18-8.1	I	BOUNTY MINERALS LLC	928 393
✓ 10	10*17925	3-18-20	J	BOUNTY MINERALS LLC	928 393
✓ 11	10*25584	3-18-10	K	JOYCE A & RANDALL COLE, WILLIS & BETH HOWARD, GEORGE & BARABARA HOWARD	915 99
✓ 12	**FORCE POOL**	3-18-6	L	EQT PRODUCTION CO., ET AL	1065 540
✓ 13	**FORCE POOL**	3-18-12	M	EQT PRODUCTION CO., ET AL	1065 540
✓ 14	**FORCE POOL**	3-18-13	N	EQT PRODUCTION CO., ET AL	1065 540
✓ 15	10*19995	3-18-14	O	JEFFREY L CUMPSTON AND TAMMY S CUMPSTON, ET AL	953 280
✓ 16	10*19995	3-18-14.1	P	JEFFREY L CUMPSTON AND TAMMY S CUMPSTON, ET AL	953 280
✓ 17	10*31115	3-18-15	Q	CNX GAS COMPANY LLC	1008 570
✓ 18	10*29980	7-2-1	R	OLIVIA S ALLEN, ET AL	1109 537
✓ 19	**FORCE POOL**	7-2-2	S	NOBLE MARCELLUS LP, C/O FALCON MINERALS CORPORATION, ET AL	N/A N/A
✓ 20	10*23820	7-2-12	T	WILLIAM E PARSONS AND NANCY L PARSONS	1011 486
✓ 21	10*23820	7-2-11	U	WILLIAM E PARSONS AND NANCY L PARSONS	1011 486
✓ 22	10*25503	7-2-3	V	BEVERLY MAE DAVIS, ET AL	910 270
✓ 23	10*21245	7-2-9	W	RICKIE G FRYE AND BARBARA E FRYE	952 384
✓ 24	10*25503	7-2-3.1	X	BEVERLY MAE DAVIS, ET AL	910 270
✓ 25	10*26711	7-2-8	Y	CNX GAS COMPANY LLC	1074 593
✓ 26	10*26711	7-2-10.1	Z	CNX GAS COMPANY LLC	1074 593
✓ 27	**FORCE POOL**	7-2-7	AA	DONALD WAYNE ANDREWS, ET AL	N/A N/A
✓ 28	10*26711	7-2-10	BB	CNX GAS COMPANY LLC	1074 593
✓ 29	10*31114	7-2-19	CC	CNX GAS COMPANY LLC	1098 627

FILE NO. 9026P22HUR2.dwg  
BRECKENRIDGE S-22HU-REV4

DATE JULY 15, 20 21

REVISED AUGUST 25, NOVEMBER 8, 20 21

OPERATORS WELL NO. BRECKENRIDGE S-22HU

API WELL NO. 47 — 051 — 02401  
STATE COUNTY PERMIT



STATE OF WEST VIRGINIA  
DIVISION OF ENVIRONMENTAL PROTECTION  
OFFICE OF OIL AND GAS



P.S.  
677

*Gregory A. Smith*

WELL OPERATOR TUG HILL OPERATING, LLC  
ADDRESS 1320 SOUTH UNIVERSITY DRIVE, SUITE 500  
FORT WORTH, TX 76107

DESIGNATED AGENT DARREN BROWN  
ADDRESS CT CORPORATION  
5098 WASHINGTON ST. W, STE 407  
CHARLESTON, WV 25313-1561

COUNTY NAME

PERMIT

**INFORMATION SUPPLIED UNDER WEST VIRGINIA CODE  
Chapter 22, Article 6A, Section 5(a)(5)  
IN LIEU OF FILING LEASE(S) AND OTHER CONTINUING CONTRACT(S)**

Under the oath required to make the verification on page 1 of this Notice and Application, I depose and say that I am the person who signed the Notice and Application for the Applicant, and that –

- (1) the tract of land is the same tract described in this Application, partly or wholly depicted in the accompanying plat, and described in the Construction and Reclamation Plan;
- (2) the parties and recordation data (if recorded) for lease(s) or other continuing contract(s) by which the Applicant claims the right to extract, produce or market the oil or gas are as follows:

Lease Name or Number	Grantor, Lessor, etc.	Grantee, Lessee, etc.	Royalty	Book/Page
----------------------	-----------------------	-----------------------	---------	-----------

\*See attached pages

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Office of Oil and Gas

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WV Department of  
Environmental Protection

**Acknowledgement of Possible Permitting/Approval  
In Addition to the Office of Oil and Gas**

The permit applicant for the proposed well work addressed in this application hereby acknowledges the possibility of the need for permits and/or approvals from local, state, or federal entities in addition to the DEP, Office of Oil and Gas, including but not limited to the following:

- WV Division of Water and Waste Management
- WV Division of Natural Resources WV Division of Highways
- U.S. Army Corps of Engineers
- U.S. Fish and Wildlife Service
- County Floodplain Coordinator

The applicant further acknowledges that any Office of Oil and Gas permit in no way overrides, replaces, or nullifies the need for other permits/approvals that may be necessary and further affirms that all needed permits/approvals should be acquired from the appropriate authority before the affected activity is initiated.

Well Operator: Tug Hill Operating, LLC  
 By: Amy L. Morris *Amy L. Morris*  
 Its: Permitting Specialist - Appalachia Region

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AUG 13 2021

WV Department of  
Environmental Protection

TMP	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
3-19-76	A	JAMES R WAYT	TRANS ENERGY INC	1/8+	729 40	N/A	N/A	N/A	N/A	Trans Energy Inc to Republic Energy Ventures LLC: 24/260	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21
3-19-76	A	EVELYN L BUTLER	TRANS ENERGY INC	1/8+	729 49	N/A	N/A	N/A	N/A	Trans Energy Inc to Republic Energy Ventures LLC: 24/260	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21
3-19-75	B	KATHERINE ZOGG OLIVER	GREAT LAKES ENERGY PARTNERS, LLC	1/8+	663 449	Name change to Range Resources - Appalachia LLC: CB 19/443	Range Resources - Appalachia LLC to Chesapeake Appalachia LLC and Statoil USA Onshore Properties Inc: 663/449	Chesapeake Appalachia LLC to Statoil USA Onshore Properties Inc: 24/363	Chesapeake Appalachia LLC to SWN Production Company LLC: 33/110	Statoil USA Onshore Properties Inc to SWN Exchange Title Holder LLC: 33/424	Cert of Merger - SWN Exchange Titleholder LLC merged with and Into SWN Production Company LLC: CB 19/624	**FORCE POOL**
3-18-1	C	BOUNTY MINERALS LLC	TH EXPLORATION LLC	1/8+	928 393	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-14-18	D	KEVIN R. EVANS	CHEVRON USA INC	1/8+	1008 561	N/A	N/A	N/A	N/A	N/A	Chevron USA Inc to EQT Aurora LLC: 47/1	**FORCE POOL**
3-18-8	F	BOUNTY MINERALS LLC	TH EXPLORATION LLC	1/8+	928 393	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-20	J	BOUNTY MINERALS LLC	TH EXPLORATION LLC	1/8+	928 393	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-10	K	JOYCE A & RANDALL COLE, WILLIS & BETH HOWARD, GEORGE & BARABARA HOWARD	AMERICAN PETROLEUM PARTNERS LLC	1/8+	916 99	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners Operating LLC to TH Exploration LLC: 43/503
3-18-6	L	BOUNTY MINERALS LLC	TH EXPLORATION LLC	1/8+	928 393	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-6	L	EQT PRODUCTION CO.	SWN PRODUCTION CO.	1/8+	1065 540	N/A	N/A	N/A	N/A	N/A	N/A	**FORCE POOL**
3-18-6	L	JOYCE M CORE AND DOUGLAS L CORE	TH EXPLORATION LLC	1/8+	961 534	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-6	L	JAMES H MYERS	TH EXPLORATION LLC	1/8+	961 532	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-6	L	MARY J. BURGE AKA MARY J. BURRIS	UNLEASED	N/A	N/A N/A	N/A	N/A	N/A	N/A	N/A	N/A	**FORCE POOL**
3-18-6	L	PHILIP C & JANICE R MCGUIRE	AMERICAN SHALE DEVELOPMENT INC & REPUBLIC ENERGY VENTURES LLC	1/8+	825 475	N/A	N/A	N/A	N/A	American Shale Devel. Inc to Republic Energy Ventures LLC: 33/255	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21
3-18-6	L	EQT PRODUCTION CO	UNLEASED	N/A	N/A N/A	N/A	N/A	N/A	N/A	N/A	N/A	**FORCE POOL**
3-18-13	N	JOYCE M CORE AND DOUGLAS L CORE	TH EXPLORATION LLC	1/8+	961 534	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-13	N	JAMES H MYERS	TH EXPLORATION LLC	1/8+	961 532	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-13	N	OLIVIA S ALLEN	TH EXPLORATION LLC	1/8+	1103 537	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-13	N	MOLLY KAY & CHAD J COLLINS	TH EXPLORATION LLC	1/8+	1103 541	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-13	N	EQT PRODUCTION CO.	SWN PRODUCTION CO.	1/8+	1065 540	N/A	N/A	N/A	N/A	N/A	N/A	**FORCE POOL**
3-18-14	O	JEFFREY L CUMPSTON AND TAMMY S CUMPSTON	TH EXPLORATION LLC	1/8+	953 280	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-14	O	KEITH D CUMPSTON AND SANDRA S CUMPSTON	TH EXPLORATION LLC	1/8+	953 277	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-14	O	VICKI J DOBBS	TH EXPLORATION LLC	1/8+	953 275	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-14	O	KAREN A MICKEY	TH EXPLORATION LLC	1/8+	953 283	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-14	O	JAMES AND DEBRA J CUMPSTON	TH EXPLORATION LLC	1/8+	953 288	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-14	O	JOHN D CUMPSTON AND DEBRA L CUMPSTON	TH EXPLORATION LLC	1/8+	953 285	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-14	O	JANET L MCISAAC	TH EXPLORATION LLC	1/8+	953 291	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-14	O	MICHAEL MAZIK AND DAWN MAZIK	TH EXPLORATION LLC	1/8+	977 350	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-14	O	PETER C KALE AND NANCY J KALE	TH EXPLORATION LLC	1/8+	983 593	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-14	O	KEVIN KALE	TH EXPLORATION LLC	1/8+	983 590	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-14	O	BELVA I PAYNTER	TH EXPLORATION LLC	1/8+	1017 594	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-14	O	STONE HILL MINERALS HOLDINGS LLC	TH EXPLORATION LLC	1/8+	1063 562	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-14	O	OLIVIA S ALLEN	TH EXPLORATION LLC	1/8+	1103 537	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-14	O	MOLLY KAY & CHAD J COLLINS	TH EXPLORATION LLC	1/8+	1103 541	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-14	O	UNKNOWN HEIRS AND ASSIGNS OF WILLIAM WESLEY PHILLIPS ET AL.	TH EXPLORATION LLC	1/8+	1118 200	N/A	N/A	N/A	N/A	N/A	N/A	N/A
3-18-14	O	PATRICIA D BONDONESE	AMERICAN SHALE DEVELOPMENT INC & REPUBLIC ENERGY VENTURES LLC	1/8+	819 461	N/A	N/A	American Shale Development Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104	SWN Production Company LLC to TH Exploration LLC: 49/120
3-18-14	O	NANCY P JOHNSON	AMERICAN SHALE DEVELOPMENT INC & REPUBLIC ENERGY VENTURES LLC	1/8+	800 323	N/A	N/A	American Shale Development Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinor USA Onshore Properties Inc: 44/489	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104	SWN Production Company LLC to TH Exploration LLC: 49/120

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3-18-14	O	LOVERINE M TAYLOR	AMERICAN SHALE DEVELOPMENT INC & REPUBLIC ENERGY VENTURES LLC	1/8+	819 462	N/A	N/A	American Shale Development Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinore USA Onshore Properties Inc: 44/489	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104	SWN Production Company LLC to TH Exploration LLC: 49/120
3-18-14	O	EDWARD LEE THOMAS	AMERICAN SHALE DEVELOPMENT INC & REPUBLIC ENERGY VENTURES LLC	1/8+	800 324	N/A	N/A	American Shale Development Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinore USA Onshore Properties Inc: 44/489	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104	SWN Production Company LLC to TH Exploration LLC: 49/120
3-18-14	O	HAROLD D MCVEY AND JANET E MCVEY	AMERICAN SHALE DEVELOPMENT INC & REPUBLIC ENERGY VENTURES LLC	1/8+	800 327	N/A	N/A	American Shale Development Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinore USA Onshore Properties Inc: 44/489	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104	SWN Production Company LLC to TH Exploration LLC: 49/120
3-18-14	O	GARY ERNEST	AMERICAN SHALE DEVELOPMENT INC & REPUBLIC ENERGY VENTURES LLC	1/8+	793 78	N/A	N/A	American Shale Development Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinore USA Onshore Properties Inc: 44/489	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104	SWN Production Company LLC to TH Exploration LLC: 49/120
3-18-14	O	EQT PRODUCTION CO	SWN PRODUCTION CO.	1/8+	1065 535	N/A	N/A	N/A	N/A	N/A	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104	SWN Production Company LLC to TH Exploration LLC: 49/120
3-18-14	O	EDWARD S PHILLIPS	AMERICAN SHALE DEVELOPMENT INC & REPUBLIC ENERGY VENTURES LLC	1/8+	798 209	N/A	N/A	American Shale Development Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinore USA Onshore Properties Inc: 44/489	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104	SWN Production Company LLC to TH Exploration LLC: 49/120
3-18-14	O	DOUGLAS N ERNEST	AMERICAN SHALE DEVELOPMENT INC & REPUBLIC ENERGY VENTURES LLC	1/8+	793 79	N/A	N/A	American Shale Development Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinore USA Onshore Properties Inc: 44/489	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104	SWN Production Company LLC to TH Exploration LLC: 49/120
3-18-14	O	DAVID L MCVEY AND MARILYNN J MCVEY	AMERICAN SHALE DEVELOPMENT INC & REPUBLIC ENERGY VENTURES LLC	1/8+	800 328	N/A	N/A	American Shale Development Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinore USA Onshore Properties Inc: 44/489	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104	SWN Production Company LLC to TH Exploration LLC: 49/120
3-18-14	O	CYNTHIA J PHILLIPS	AMERICAN SHALE DEVELOPMENT INC & REPUBLIC ENERGY VENTURES LLC	1/8+	819 460	N/A	N/A	American Shale Development Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to SWN Production Company & Equinore USA Onshore Properties Inc: 44/489	Equinor USA Onshore Properties Inc to TH Exploration LLC: 49/104	SWN Production Company LLC to TH Exploration LLC: 49/120
7-2-1	R	OLIVIA S ALLEN	TH EXPLORATION LLC	1/8+	1103 537	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7-2-1	R	MOLLY KAY & CHAD J COLLINS	TH EXPLORATION LLC	1/8+	1103 541	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7-2-2	S	WILLIAM L JOHNSON JR AND NORA J JOHNSON	TH EXPLORATION LLC	1/8+	926 196	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7-2-2	S	JAMES R WILLIAMS AND ENID BETH WILLIAMS	TH EXPLORATION LLC	1/8+	952 344	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7-2-2	S	MARKUS DANIEL HUGHES	TH EXPLORATION LLC	1/8+	957 156	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7-2-2	S	TYLER MARLING HUGHES & SAMANTHA HUGHES	TH EXPLORATION LLC	1/8+	957 158	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7-2-2	S	ELIJAH JEFFREY HUGHES	TH EXPLORATION LLC	1/8+	957 160	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7-2-2	S	STEVEN R MCDIFFIT AND LISA RAE MCDIFFIT	TH EXPLORATION LLC	1/8+	958 438	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7-2-2	S	RALPH N LEMMONS AND LU ANN LEMMONS	TH EXPLORATION LLC	1/8+	958 436	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7-2-2	S	JESSIE LEE ESTEL	TH EXPLORATION LLC	1/8+	960 137	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7-2-2	S	LARRY W HAMMERS AND JANICE LYNN HAMMERS	TH EXPLORATION LLC	1/8+	958 434	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7-2-2	S	DAVID HERMAN ESTEL AND TINA ESTEL	TH EXPLORATION LLC	1/8+	960 52	N/A	N/A	N/A	N/A	N/A	N/A	N/A

TMP	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
7-2-2	S	WV MINERALS INC	TH EXPLORATION LLC	1/8+	1061	597	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7-2-2	S	ROBERT M HUGHES	AMERICAN SHALE DEVELOPMENT INC	1/8+	827	400	N/A	N/A	N/A	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21
7-2-2	S	PAMELA J JOHNSON	AMERICAN SHALE DEVELOPMENT INC	1/8+	795	469	N/A	N/A	N/A	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21
7-2-2	S	DAVID L MCVEY AND MARILYNN J MCVEY	AMERICAN SHALE DEVELOPMENT INC	1/8+	800	329	N/A	N/A	N/A	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21
7-2-2	S	HAROLD D MCVEY AND JANET E MCVEY	AMERICAN SHALE DEVELOPMENT INC	1/8+	800	326	N/A	N/A	N/A	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21
7-2-2	S	EDWARD LEE THOMAS	AMERICAN SHALE DEVELOPMENT INC	1/8+	800	325	N/A	N/A	N/A	N/A	American Shale Devel. Inc to Republic Partners VIII LLC: 31/482	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21
7-2-2	S	HELEN G MARLING	REPUBLIC ENERGY VENTURES LLC	1/8+	905	426	N/A	N/A	N/A	N/A	N/A	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	EQT Production Company to TH Exploration LLC: 48/21
7-2-2	S	NOBLE MARCELLUS LP, C/O FALCON MINERALS CORPORATION	UNLEASED	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	**FORCE POOL**
7-2-2	S	ROBERT R KENNEDY JR	REPUBLIC ENERGY VENTURES LLC	1/8+	905	425	N/A	N/A	N/A	N/A	N/A	Republic Energy Ventures LLC, Republic Partners VI, LP, Republic Partners VII & VIII, LLC, and Republic Energy Operating LLC to EQT Production Company: 37/25	**FORCE POOL**
7-2-2	S	EQT PRODUCTION COMPANY	TH EXPLORATION LLC	1/8+	1100	528	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7-2-3	V	BEVERLY MAE DAVIS	AMERICAN PETROLEUM PARTNERS LLC	1/8+	910	270	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners Operating LLC to TH Exploration LLC: 43/503
7-2-3	V	DAVID LEE DAVIS AND A JANE DAVIS	AMERICAN PETROLEUM PARTNERS LLC	1/8+	910	265	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners Operating LLC to TH Exploration LLC: 43/503
7-2-3	V	KAREN S HOLT	AMERICAN PETROLEUM PARTNERS LLC	1/8+	930	261	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners Operating LLC to TH Exploration LLC: 43/503
7-2-3	V	KATHY L YOUNG AND RODNEY A YOUNG	AMERICAN PETROLEUM PARTNERS LLC	1/8+	932	142	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners Operating LLC to TH Exploration LLC: 43/503
7-2-3	V	RICKY J CAIN	AMERICAN PETROLEUM PARTNERS LLC	1/8+	930	295	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners Operating LLC to TH Exploration LLC: 43/503
7-2-3	V	SUSAN E WRIGHT	AMERICAN PETROLEUM PARTNERS LLC	1/8+	932	207	N/A	N/A	N/A	N/A	N/A	N/A	American Petroleum Partners Operating LLC to TH Exploration LLC: 43/503
7-2-9	W	RICKIE G FRYE AND BARBARA E FRYE	TH EXPLORATION LLC	1/8+	952	384	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7-2-10.1	Z	CNX GAS COMPANY LLC	TH EXPLORATION LLC	1/8+	1074	593	N/A	N/A	N/A	N/A	N/A	N/A	N/A
7-2-10	BB	CNX GAS COMPANY LLC	TH EXPLORATION LLC	1/8+	1074	593	N/A	N/A	N/A	N/A	N/A	N/A	N/A

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TMP	Tag	Grantor, Lessor, Etc.	Grantee, Lessee, Etc.	Royalty	Deed Book/Page		Assignment	Assignment	Assignment	Assignment	Assignment	Assignment
7-2-39	CC	CNX GAS COMPANY LLC	TH EXPLORATION LLC	1/8±	1098	627	N/A	N/A	N/A	N/A	N/A	N/A

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ASSIGNMENT AND BILL OF SALE

This ASSIGNMENT AND BILL OF SALE (this "Assignment") dated as of December 1, 2020 (the "Execution Date"), is made by and between EQT PRODUCTION COMPANY, a Pennsylvania corporation, with an address at 625 Liberty Avenue, Suite 1700, Pittsburgh, Pennsylvania 15222 ("EQT"), and TH EXPLORATION, LLC, a Texas limited liability company, with an address at 1320 S. University Drive, Suite 500, Fort Worth, Texas 76107 ("TH") pursuant to the terms of that certain Acreage Trade Agreement by and among BQT, TH and TH Exploration II, LLC ("TH II"), dated July 8, 2020 (the "Agreement"). EQT and TH may be referred to herein together as the "Parties", and each individually as a "Party".

RECITALS

WHEREAS, EQT desires to transfer, convey and assign to TH certain of EQT's oil and gas leasehold interests located in Marshall County, West Virginia set forth on Exhibit A attached hereto and incorporated herein ("EQT Leases") in accordance with this Assignment and the Agreement; and

WHEREAS, TH desires to receive from BQT, all of BQT's right, title and interest in and to the EQT Leases in accordance with this Assignment and the Agreement.

NOW, THEREFORE, for and in consideration of the mutual promises contained herein and in the Agreement, the benefits to be derived by each Party hereunder and under the Agreement, and other good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, the Parties hereby agree as follows:

ARTICLE I  
DEFINED TERMS

1.1 *Definitions.* Capitalized terms used herein and not otherwise defined throughout this Assignment shall have the meanings given such terms in the Agreement.

ARTICLE II  
ASSIGNMENT OF ASSETS

2.1 *Assignment.* Subject to the terms and conditions of this Assignment and the Agreement, EQT does hereby assign, convey and transfer to TH all of the right, title and interest of EQT in and to the following (collectively for purposes of this Assignment, the "EQT Assets"):

(a) Subject to the conveyance of the Wells Assets from EQT to TH II as described in the Agreement, the EQT Leases and appurtenances thereto (including rights of access and to install facilities), all Hydrocarbons within, produced from, derived from, or sold from the EQT Leases (and all proceeds related thereto), on and after the Valuation Date, and all Surface Contracts including but not limited to those set forth on Exhibit B attached hereto and incorporated herein (the "EQT Surface Contracts") related to the EQT Leases and such Hydrocarbons; and

(b) Copies of deeds, files and all other ownership information directly related to the acquisition, operations and maintenance of the EQT Leases, lease files for the EQT Leases

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COPY

STATE OF WEST VIRGINIA  
COUNTY OF MARSHALL

Marshall County  
Jan Pest, Clerk  
Instrument 1453305  
04/24/2019 @ 11:51:22 AM  
ASSIGNMENTS  
Book 43 @ Page 505  
Pages Recorded 10  
Recording Cost \$ 17.00

ASSIGNMENT AND CONVEYANCE

THIS ASSIGNMENT AND CONVEYANCE (the "Assignment") is made and entered into this 23<sup>rd</sup> day of April, 2019 (the "Effective Date"), by and between AMERICAN PETROLEUM PARTNERS OPERATING, LLC, (hereinafter "Assignor") and TH EXPLORATION, LLC (hereinafter "Assignee") pursuant to the terms of that certain Acreage Trade Agreement between the Assignor and the Assignee dated November 15, 2018 (the "Acreage Trade Agreement"). Capitalized terms used but not defined herein and defined in the Acreage Trade Agreement shall have the meanings given to such terms in the Acreage Trade Agreement.

WITNESSETH:

WHEREAS, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to those certain Oil and Gas Leases situated in Marshall County, West Virginia, as described in Exhibit A-2, attached hereto and made a part hereof (hereinafter the "Leases"); and

WHEREAS, Assignor desires to assign, set over, and transfer to Assignee all of Assignor's right, title, and interest in and to the Leases as described below.

NOW, THEREFORE, for good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, and subject to the limited warranties, restrictions and conditions hereinafter mentioned, the parties hereto, intending to be legally bound, do covenant and agree as follows:

1. Assignment. Assignor does hereby grant, bargain, sell, convey, deliver, assign, set over and transfer, as of the Effective Date, to Assignee, its respective successors and assigns, forever, all of Assignor's right, title and interest in and to the Leases, and the lands covered thereby, together with all rights incident thereto and appurtenances thereon.

TO HAVE AND TO HOLD such right, title and interest in and to the Leases unto Assignee or its designee, and their respective successors and assigns, forever, in accordance with the provisions of this Assignment.

2. Special Warranty. Assignor represents and warrants that Assignor has not conveyed or otherwise encumbered (other than Permitted Encumbrances) its interest in the Leases since the time that Assignor obtained its interests in the Leases. Assignor does covenant, promise and agree, to and with the Assignee, its respective successors and assigns, to forever specially warrant and defend the title to the Leases or portions thereof included under this Assignment, unto the Assignee and its respective successors and assigns, against the lawful claims of Assignor, and all persons claiming, or to claim, the same or any part thereof, by, through or under Assignor.

Assignor represents and warrants that Assignor has paid any and all bonuses, rentals, royalties, overriding royalties, and other payments required by the Leases which were due for the period in which Assignor held its interests in the Leases, and that Assignor has fully performed all conditions necessary to maintain the Leases in full force and effect during such period, free and clear of all Encumbrances, except for and subject only to Permitted Encumbrances.

3. Successors and Assigns. The terms of this Assignment shall be binding upon and inure to the benefit of the parties hereto and each of their respective successors

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11/19/2021

**ASSIGNMENT AND CONVEYANCE**

This Assignment and Conveyance (this “*Assignment*”) is from SWN PRODUCTION COMPANY, LLC, a Texas limited liability company (“*Assignor*”), to TH Exploration, LLC, a Texas limited liability company (“*Assignee*”), and is executed on June 30, 2021 (the “*Effective Date*”). Assignor and Assignee may be referred to herein collectively as the “*Parties*,” or individually as a “*Party*.” Capitalized terms used herein but not otherwise defined herein (including in Section 3.7) shall have the meanings given such terms in that certain Acreage Trade Agreement between the Assignor and the Assignee dated June 22, 2021 (the “*Acreage Trade Agreement*”).

**ARTICLE 1  
 ASSIGNMENT OF ASSETS**

**Section 1.1 Assignment.** For good and valuable consideration, the receipt and sufficiency of which are hereby acknowledged, Assignor hereby GRANTS, BARGAINS, ASSIGNS, CONVEYS AND TRANSFERS unto Assignee all of Assignor’s right, title and interest in and to (i) the oil and gas leases described in more detail on Exhibit A attached hereto (the “*Leases*”) INSO FAR AND ONLY INSO FAR as they cover those lands described on Exhibit A (the “*Leasehold Rights*”) and (ii) any surface use agreements that relate to such Leasehold Rights (collectively with the Leasehold Rights, the “*Conveyed Assets*”).

**TO HAVE AND TO HOLD** the Conveyed Assets, together with all and singular the rights, privileges, contracts and appurtenances, in any way appertaining or belonging thereto, unto Assignee, its successors and assigns, forever, subject, to the terms and conditions of this Assignment.

**Section 1.2 Assignment Subject to Acreage Trade Agreement.** This Assignment is made in accordance with and is subject to the terms, covenants and conditions contained in that certain Acreage Trade Agreement. In the event of a conflict between the provisions of the Acreage Trade Agreement and this Assignment, the provisions of the Acreage Trade Agreement shall control. The execution and delivery of this Assignment by Assignor, and the execution and acceptance of this Assignment by Assignee, shall not operate to release or impair any surviving rights or obligations of either Party with respect to the other under the Acreage Trade Agreement.

**ARTICLE 2  
 SPECIAL WARRANTY OF TITLE AND DISCLAIMERS**

**Section 2.1 Special Warranty of Title.** Assignor hereby agrees to warrant and defend Defensible Title to the Leases unto Assignee, its successors and assigns, against every Person whomsoever lawfully claiming or to claim the same or any part thereof by, through or under Assignor or any of its Affiliates, but not otherwise.

**Section 2.2 Disclaimers of Warranties and Representations.**

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11/19/2021



August 11, 2021

WV Department of Environmental Protection  
Office of Oil & Gas  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
Attention: Susan Rose

RE: Breckenridge S-22HU

Subject: Proposed Voluntary Pooling and Unitization

Dear Susan:

Tug Hill Operating, LLC is authorized through, either lease or other agreement, to unitize and pool all lands falling within the boundaries of the proposed voluntary unit included with this submission, with the exception of the following tracts which we intend to force pool.

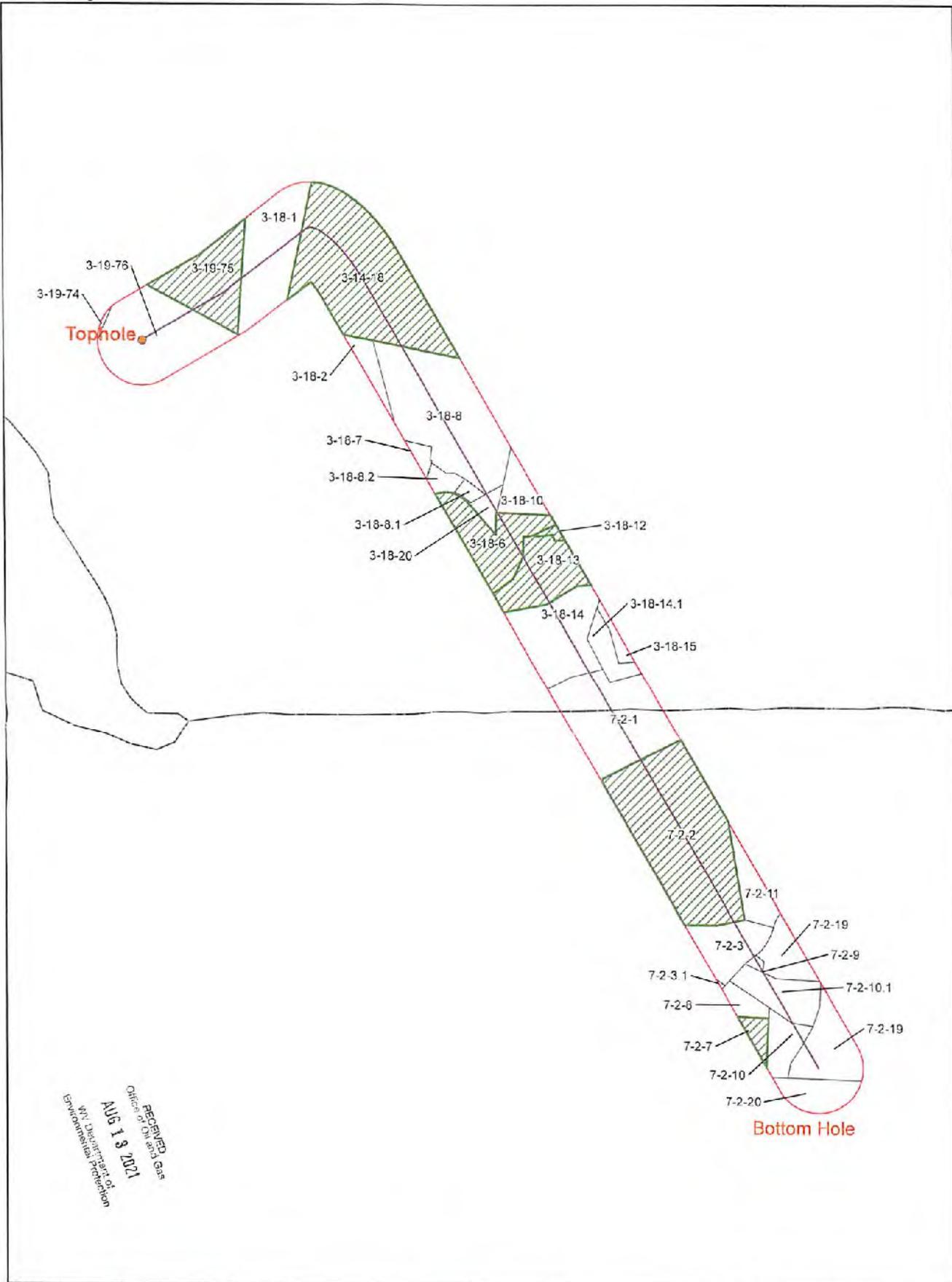
3-19-75  
3-14-18  
3-18-6  
3-18-13  
3-18-12  
7-2-2  
7-2-7

If your office has any questions or concerns regarding the contents of this letter, please do not hesitate to contact me directly at 724-749-8388, or by email at [amorris@tug-hillop.com](mailto:amorris@tug-hillop.com).

Sincerely,

**Amy L. Morris**  
Permitting Specialist – Appalachia Region  
Tug Hill Operatin I

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AUG 13 2021  
WV Department of  
Environmental Protection



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AUG 18 2021  
Office of Environmental Protection

Coordinate System: NAD 83  
Datum: North American 1983  
Scale: 1:50,000  
Units: Feet  
Projection: UTM  
Zone: 18N  
Spheroid: GRS 1967  
Datum: North American 1983  
Scale: 1:50,000  
Units: Feet  
Projection: UTM  
Zone: 18N

**CONFIDENTIAL**



- Utica Well
- Force Pool
- 500' Buffer

Breckenridge S-22HU  
Operators within 500 Feet of Well Borehole



11/19/2021

**CERTIFICATE OF CONSENT AND EASEMENT**

The undersigned, for valuable consideration, the receipt and sufficiency of which is hereby acknowledged, being the owner of the surface of that certain lots, tracts or parcels of land located in Cameron District, Marshall County, State of West Virginia, shown on the attached plat or survey, hereby consents and grants an easement (subject to the terms of a separate Surface Use Agreement between the undersigned and TH Exploration, LLC (the "SUA")), pursuant to West Virginia Code, Section 22C-9-7(b)(4) and Operating Rule 4.4 of the Rules and Regulations of the West Virginia Oil and Gas Conservation Commission, to TH Exploration, LLC, its successors or permitted assigns subject to the SUA, for the drilling and operation of a deep well for the production of oil or gas at the location shown on the attached plat or survey.

[Signatures on the Following Page]

Marshall County  
Jan Pest, Clerk  
Instrument 1472063  
11/04/2020 @ 01:07:07 PM  
RIGHT OF WAY W/O CONSIDERATION  
Book 1098 @ Page 555  
Pages Recorded 3  
Recording Cost \$ 11.00

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AUG 13 2021  
WV Department of  
Environmental Protection

11/19/2021

Executed the date set forth in the notary but effective as of November 2, 2020.

CNX LAND LLC

By: [Signature]  
Name: Peter J. Binotto  
Title: Assistant Vice President

COMMONWEALTH OF PENNSYLVANIA

SS:

COUNTY OF WASHINGTON

On this, the 30 day of Oct, 2020, before me, a notary public, the undersigned officer, personally appeared Peter J. Binotto who acknowledged himself/herself to be the Assistant Vice President of CNX Land LLC and that he/she as such, being authorized to do so, executed the foregoing instrument for the purposes therein contained by signing the name of the company by himself/herself as Assistant Vice President.

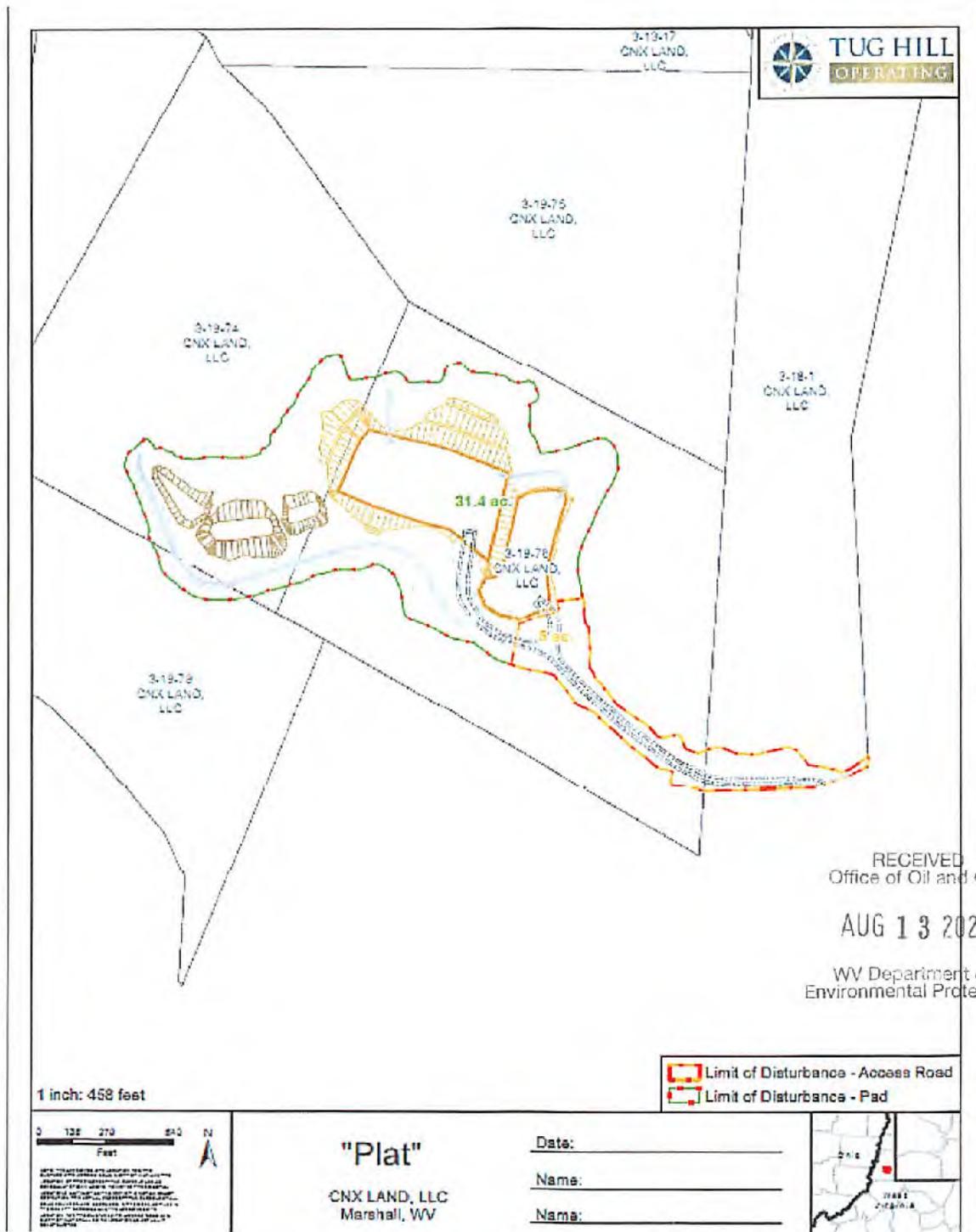
IN WITNESS WHEREOF, I hereunto set my hand and official seal.

My Commission Expires: \_\_\_\_\_  
Signature of Notary Public: [Signature]  
Name/Notary Public (print): \_\_\_\_\_

**This instrument prepared by:**  
WV Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street  
Charleston, WV 25304

COMMONWEALTH OF PENNSYLVANIA  
NOTARIAL SEAL  
Douglas E. Smith, Notary Public  
Cecil Twp., Washington County  
My Commission Expires Dec. 6, 2020  
MEMBER, PENNSYLVANIA ASSOCIATION OF NOTARIES

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Office of Oil and Gas  
AUG 13 2021  
WV Department of  
Environmental Protection



STATE OF WEST VIRGINIA, MARSHALL COUNTY, SCT.:

I, JAN PEST, Clerk of the County Commission of said County, do hereby certify that the annexed writing, bearing date on the 2nd day of November, 2020, was presented for and by me, admitted to record in my office upon the above certificate as to the parties therein named this 4th day of November, 2020 at 1:07 11/19/2021 M.

*(Handwritten signatures and initials)*



---

west virginia department of environmental protection

---

Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street SE, Charleston, WV 25304  
304-414-1239

Randall M. Albert, Chairman  
dep.wv.gov

August 27, 2021

EQT Production Company  
625 Liberty Ave Ste 1700  
Pittsburgh PA 15222

9489 0090 0027 6201 3319 94  
in transit 9-5-21

RE: Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC – Breckenridge S-22HU

Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commissions' granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received within ten 10 days from the date of delivery, the application will be processed in the normal manner.

If you have any questions please call me at (304) 414-1239.

Sincerely,

A handwritten signature in black ink that reads "Susan Rose". The signature is written in a cursive, flowing style.

Susan Rose  
Administrator

encl:

11/19/2021



September 22, 2021

Dear Customer,

The following is the proof-of-delivery for tracking number: 283967525791

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**Delivery Information:**

---

<b>Status:</b>	Delivered	<b>Delivered To:</b>	
<b>Signed for by:</b>	Signature release on file	<b>Delivery Location:</b>	400 WOODCLIFF DR
<b>Service type:</b>	FedEx Priority Overnight		
<b>Special Handling:</b>	Deliver Weekday		CANONSBURG, PA, 15317
		<b>Delivery date:</b>	Sep 22, 2021 10:33

---

**Shipping Information:**

---

<b>Tracking number:</b>	283967525791	<b>Ship Date:</b>	Sep 21, 2021
		<b>Weight:</b>	0.5 LB/0.23 KG

**Recipient:**  
Corey Peck, EQT Production Company  
400 Woodcliff Drive  
CANONSBURG, PA, US, 15317

**Shipper:**  
AMY MORRIS, TUH HILL OPERATING, LLC  
380 SOUTHPOINTE BLVD  
PLAZA II, SUITE 200  
CANONSBURG, PA, US, 15317

Proof-of-delivery details appear below; however, no signature is available for this FedEx Express shipment because a signature was not required.

11/19/2021



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west virginia department of environmental protection

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Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street SE, Charleston, WV 25304  
304-414-1239

Randall M. Albert, Chairman  
dep.wv.gov

August 27, 2021

Equinor USA Onshore Properties, Inc.  
6300 Bridge Point Pkwy Bldg 2 Ste 100  
Austin TX 78730

9489 0090 00276201 3319 70  
Forward 9-2

RE: Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC – Breckenridge S-22HU

Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commissions' granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

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Sincerely,

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Susan Rose  
Administrator

encl:

11/19/2021



---

west virginia department of environmental protection

---

Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street SE, Charleston, WV 25304  
304-414-1239

Randall M. Albert, Chairman  
dep.wv.gov

August 27, 2021

TH Exploration, LLC  
1320 S. University Dr Ste 500  
Ft Worth TX 76107

9489 0090 0027 6201 331987

RE: Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC – Breckenridge S-22HU

Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commissions' granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

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Sincerely,

A handwritten signature in black ink that reads "Susan Rose". The signature is written in a cursive, flowing style.

Susan Rose  
Administrator

encl:

11/19/2021



September 14, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:  
**9489 0090 0027 6201 3319 87.**

#### Item Details

<b>Status:</b>	Delivered, Front Desk/Reception/Mail Room
<b>Status Date / Time:</b>	September 2, 2021, 1:35 pm
<b>Location:</b>	FORT WORTH, TX 76107
<b>Postal Product:</b>	First-Class Mail®
<b>Extra Services:</b>	Certified Mail™ Return Receipt Electronic

#### Shipment Details

<b>Weight:</b>	20lb, 3.9oz
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#### Recipient Signature

Signature of Recipient:	<i>JB</i>
Address of Recipient:	<i>JB Attn Covid-19 1320 S University 76107 #500</i>

Note: Scanned image may reflect a different destination address due to Intended Recipient's delivery instructions on file.

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Washington, D.C. 20260-0004

11/19/2021



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Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street SE, Charleston, WV 25304  
304-414-1239

Randall M. Albert, Chairman  
dep.wv.gov

August 27, 2021

Southwestern Energy  
10000 Energy Dr  
Spring TX 77389

9489 00910 00276349 8920 12

RE: Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC – Breckenridge S-22HU

Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

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If you have any questions please call me at (304) 414-1239.

Sincerely,

A handwritten signature in black ink that reads "Susan Rose". The signature is written in a cursive, flowing style.

Susan Rose  
Administrator

encl:

11/19/2021



September 14, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:  
**9489 0090 0027 6349 8920 12.**

**Item Details**

**Status:** Delivered, Front Desk/Reception/Mail Room  
**Status Date / Time:** September 1, 2021, 11:55 am  
**Location:** MORGANTOWN, WV 26508  
**Postal Product:** First-Class Mail®  
**Extra Services:** Certified Mail™  
Return Receipt Electronic

**Shipment Details**

**Weight:** 20lb, 3.3oz

**Recipient Signature**

Signature of Recipient:	CO-19 MARVIN
Address of Recipient:	1300 FORT Purport #201

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west virginia department of environmental protection

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Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street SE, Charleston, WV 25304  
304-414-1239

Randall M. Albert, Chairman  
dep.wv.gov

August 27, 2021

Estate of Robert Edison Andrews aka Edison Andrews  
3107 Broomsedge Way  
Durham NC 27712

9489 0090 0027 6349 8920 29

RE: Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC – Breckenridge S-22HU

Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commissions' granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received within ten 10 days from the date of delivery, the application will be processed in the normal manner.

If you have any questions please call me at (304) 414-1239.

Sincerely,

A handwritten signature in black ink that reads "Susan Rose". The signature is written in a cursive, flowing style.

Susan Rose  
Administrator

encl:

11/19/2021



September 14, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:  
**9489 0090 0027 6349 8920 29.**

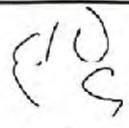
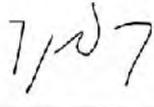
**Item Details**

<b>Status:</b>	Delivered, Left with Individual
<b>Status Date / Time:</b>	September 2, 2021, 3:03 pm
<b>Location:</b>	DURHAM, NC 27712
<b>Postal Product:</b>	First-Class Mail®
<b>Extra Services:</b>	Certified Mail™ Return Receipt Electronic

**Shipment Details**

<b>Weight:</b>	12lb, 14.4oz
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**Recipient Signature**

Signature of Recipient:	
Address of Recipient:	

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Sincerely,  
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Washington, D.C. 20260-0004

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west virginia department of environmental protection

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Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street SE, Charleston, WV 25304  
304-414-1239

Randall M. Albert, Chairman  
dep.wv.gov

August 27, 2021

Donald Wayne Andrews  
141 Youngs Lane  
Wellsburg WV 26070

9489 0090 0027 6349 8920 36

RE: Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC – Breckenridge S-22HU

Dear Sir:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commissions' granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

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If you have any questions please call me at (304) 414-1239.

Sincerely,

Susan Rose  
Administrator

encl:

11/19/2021



September 14, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:  
**9489 0090 0027 6349 8920 36.**

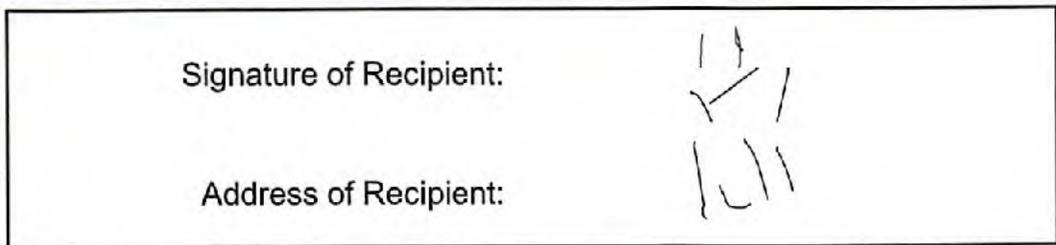
**Item Details**

<b>Status:</b>	Delivered, Left with Individual
<b>Status Date / Time:</b>	September 1, 2021, 1:22 pm
<b>Location:</b>	WELLSBURG, WV 26070
<b>Postal Product:</b>	First-Class Mail®
<b>Extra Services:</b>	Certified Mail™ Return Receipt Electronic

**Shipment Details**

<b>Weight:</b>	12lb, 15.1oz
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**Recipient Signature**



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11/19/2021



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west virginia department of environmental protection

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Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street SE, Charleston, WV 25304  
304-414-1239

Randall M. Albert, Chairman  
dep.wv.gov

August 27, 2021

Janet Lorraine Andrews Puskarich  
54 Bluegrass Ave  
Middleburg FL 32068

9489 0090 0027 6349 8920 43

RE: Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC – Breckenridge S-22HU

Dear Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commissions' granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

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If you have any questions please call me at (304) 414-1239.

Sincerely,

A handwritten signature in black ink that reads "Susan Rose". The signature is written in a cursive, flowing style.

Susan Rose  
Administrator

encl:

11/19/2021

September 14, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:  
**9489 0090 0027 6349 8920 43.**

**Item Details**

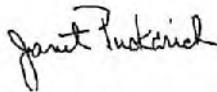
<b>Status:</b>	Delivered
<b>Status Date / Time:</b>	September 8, 2021, 2:08 pm
<b>Location:</b>	MIDDLEBURG, FL 32068
<b>Postal Product:</b>	First-Class Mail®
<b>Extra Services:</b>	Certified Mail™ Return Receipt Electronic

**Shipment Details**

<b>Weight:</b>	12lb, 15.1oz
----------------	--------------

**Recipient Signature**

Signature of Recipient:



Address of Recipient:

54 BLUEGRASS AVE  
MIDDLEBURG, FL 32068 4711

Note: Scanned image may reflect a different destination address due to Intended Recipient's delivery instructions on file.

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Sincerely,  
United States Postal Service®  
475 L'Enfant Plaza SW  
Washington, D.C. 20260-0004

11/19/2021



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west virginia department of environmental protection

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Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street SE, Charleston, WV 25304  
304-414-1239

Randall M. Albert, Chairman  
dep.wv.gov

August 27, 2021

Noble Marcellus LP, % Falcon Minerals Corp  
609 Main St Ste 3950  
Houston, TX 77002

9489 0090 0027 62013320 07

RE: Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC – Breckenridge S-22HU

Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received within ten 10 days from the date of delivery, the application will be processed in the normal manner.

If you have any questions please call me at (304) 414-1239.

Sincerely,

A handwritten signature in black ink that reads "Susan Rose". The signature is written in a cursive, flowing style.

Susan Rose  
Administrator

encl:

11/19/2021



September 14, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number:  
**9489 0090 0027 6201 3320 07.**

**Item Details**

**Status:** Delivered, Front Desk/Reception/Mail Room  
**Status Date / Time:** September 2, 2021, 11:07 am  
**Location:** HOUSTON, TX 77002  
**Postal Product:** First-Class Mail®  
**Extra Services:** Certified Mail™  
Return Receipt Electronic

**Shipment Details**

**Weight:** 10lb, 1.3oz

**Recipient Signature**

Signature of Recipient:	VA 251 C-19
Address of Recipient:	605 Main 7950

Note: Scanned image may reflect a different destination address due to Intended Recipient's delivery instructions on file.

Thank you for selecting the United States Postal Service® for your mailing needs. If you require additional assistance, please contact your local Post Office™ or a Postal representative at 1-800-222-1811.

Sincerely,  
United States Postal Service®  
475 L'Enfant Plaza SW  
Washington, D.C. 20260-0004

11/19/2021



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west virginia department of environmental protection

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Oil and Gas Conservation Commission  
601 57<sup>th</sup> Street SE, Charleston, WV 25304  
304-414-1239

Randall M. Albert, Chairman  
dep.wv.gov

August 27, 2021

Mary J. Burge aka Marty J. Burris  
4061 New Bethel Rd  
Cameron WV 26033

9489 0090 0027 6349 8921 66

RE: Intentional Deviation of New Deep Well  
Tug Hill Operating, LLC – Breckenridge S-22HU

Dear Sir or Ma'am:

Please be advised that Tug Hill Operating, LLC, has applied to the Oil and Gas Conservation Commission for approval to intentionally deviate a new deep well. The Code of State Regulations Title 39 Section 1.4.10 requires that the Commission notify the offset operators of the applicants' intent to deviate the proposed well. You are receiving this notice because you are listed as an offset operator (unleased mineral owner is also an "offset operator") to the proposed well. Any offset operator has ten days to object to the Commission's granting approval to the proposed deviation. If you file an objection, the Commission will schedule a hearing and you will be notified of the date and time to attend.

A copy of the location plat is enclosed for your review. If no objection(s) are received within ten 10 days from the date of delivery, the application will be processed in the normal manner.

If you have any questions please call me at (304) 414-1239.

Sincerely,

A handwritten signature in black ink that reads "Susan Rose". The signature is written in a cursive, flowing style.

Susan Rose  
Administrator

encl:

11/19/2021



September 14, 2021

Dear Susan Rose:

The following is in response to your request for proof of delivery on your item with the tracking number: **9489 0090 0027 6349 8921 66.**

**Item Details**

<b>Status:</b>	Delivered, Left with Individual
<b>Status Date / Time:</b>	September 1, 2021, 12:54 pm
<b>Location:</b>	CAMERON, WV 26033
<b>Postal Product:</b>	First-Class Mail®
<b>Extra Services:</b>	Certified Mail™ Return Receipt Electronic

**Shipment Details**

<b>Weight:</b>	7lb, 8.0oz
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**Recipient Signature**

Signature of Recipient:	Mary Burrill PLRS C19
Address of Recipient:	4061 Newbold

Note: Scanned image may reflect a different destination address due to Intended Recipient's delivery instructions on file.

Thank you for selecting the United States Postal Service® for your mailing needs. If you require additional assistance, please contact your local Post Office™ or a Postal representative at 1-800-222-1811.

Sincerely,  
United States Postal Service®  
475 L'Enfant Plaza SW  
Washington, D.C. 20260-0004

11/19/2021

**Offset Operator's within 500'  
Breckenridge S - 22HU**

COUNTY	DISTRICT	TMP	LESSEE	ADDRESS
Marshall	Cameron	3-14-18	EQT PRODUCTION COMPANY	625 Liberty Avenue Ste 1700 Pittsburgh, PA 15222
Marshall	Cameron	3-18-1	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Cameron	3-18-10	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Cameron	3-18-12	EQT PRODUCTION COMPANY	625 Liberty Avenue Ste 1700 Pittsburgh, PA 15222
Marshall	Cameron	3-18-12	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Cameron	3-18-12	SOUTHWESTERN ENERGY	10000 Energy Drive Spring, TX 77389
Marshall	Cameron	3-18-12	EQUINOR USA ONSHORE PROPERTIES INC	6300 Bridge Point Pkwy Bldg 2, Suite 100 Austin, TX 78730
Marshall	Cameron	3-18-13	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Cameron	3-18-13	SOUTHWESTERN ENERGY	10000 Energy Drive Spring, TX 77389
Marshall	Cameron	3-18-13	EQUINOR USA ONSHORE PROPERTIES INC	6300 Bridge Point Pkwy Bldg 2, Suite 100 Austin, TX 78730
Marshall	Cameron	3-18-14	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Cameron	3-18-14.1	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107

11/19/2021

**Offset Operator's within 500'  
Breckenridge S - 22HU**

COUNTY	DISTRICT	TMP	LESSEE	ADDRESS
Marshall	Cameron	3-18-15	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Cameron	3-18-2	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Cameron	3-18-6	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Cameron	3-18-6	EQT PRODUCTION COMPANY	625 Liberty Avenue Ste 1700 Pittsburgh, PA 15222
Marshall	Cameron	3-18-6	SOUTHWESTERN ENERGY	10000 Energy Drive Spring, TX 77389
Marshall	Cameron	3-18-6	EQUINOR USA ONSHORE PROPERTIES INC	6300 Bridge Point Pkwy Bldg 2, Suite 100 Austin, TX 78730
Marshall	Cameron	3-18-6	MARY J BURGE AKA MARY J BURRIS	4061 New Bethel Road Cameron, WV 26033
Marshall	Cameron	3-18-7	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Cameron	3-18-8	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Cameron	3-18-8.1	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Cameron	3-18-8.2	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Cameron	3-18-20	TH EXPLORATION LLC	1321 S. University Blvd. Suite 500 Fort Worth, TX 76107

11/19/2021

**Offset Operator's within 500'  
Breckenridge S - 22HU**

COUNTY	DISTRICT	TMP	LESSEE	ADDRESS
Marshall	Cameron	3-19-74	SOUTHWESTERN ENERGY	10000 Energy Drive Spring, TX 77389
Marshall	Cameron	3-19-74	EQUINOR USA ONSHORE PROPERTIES INC	6300 Bridge Point Pkwy Bldg 2, Suite 100 Austin, TX 78730
Marshall	Cameron	3-19-75	SOUTHWESTERN ENERGY	10000 Energy Drive Spring, TX 77389
Marshall	Cameron	3-19-75	EQUINOR USA ONSHORE PROPERTIES INC	6300 Bridge Point Pkwy Bldg 2, Suite 100 Austin, TX 78730
Marshall	Cameron	3-19-76	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Liberty	7-2-1	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Liberty	7-2-10	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Liberty	7-2-10.1	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Liberty	7-2-11	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Liberty	7-2-19	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Liberty	7-2-20	SOUTHWESTERN ENERGY	10000 Energy Drive Spring, TX 77389
Marshall	Liberty	7-2-20	EQUINOR USA ONSHORE PROPERTIES INC	6300 Bridge Point Pkwy Bldg 2, Suite 100 Austin, TX 78730

11/19/2021

**Offset Operator's within 500'  
Breckenridge S - 22HU**

COUNTY	DISTRICT	TMP	LESSEE	ADDRESS
Marshall	Liberty	7-2-2	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Liberty	7-2-2	EQT PRODUCTION COMPANY	625 Liberty Avenue Ste 1700 Pittsburgh, PA 15222
Marshall	Liberty	7-2-2	NOBLE MARCELLUS LP, C/O FALCON MINERALS CORPORATION	609 Main Street Suite 3950 Houston, Texas 77002
Marshall	Liberty	7-2-3	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Liberty	7-2-3.1	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Liberty	7-2-7	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107
Marshall	Liberty	7-2-7	SOUTHWESTERN ENERGY	10000 Energy Drive Spring, TX 77389
Marshall	Liberty	7-2-7	EQUINOR USA ONSHORE PROPERTIES INC	6300 Bridge Point Pkwy Bldg 2, Suite 100 Austin, TX 78730
Marshall	Liberty	7-2-7	ESTATE OF ROBERT EDISON ANDREWS A/K/A EDISON ANDREWS	3107 Broomsedge Way Durham, NC 27712
Marshall	Liberty	7-2-7	DONALD WAYNE ANDREWS	141 Youngs Lane Wellsburg, WV 26070
Marshall	Liberty	7-2-7	JANET LORRAINE ANDREWS PUSKARICH	54 Bluegrass Avenue Middleburg, FL 32068
Marshall	Liberty	7-2-7	UNKNOWN HEIRS AND ASSIGNS OF RONDA OWENS SPRINGER	ADDRESS UNKNOWN
Marshall	Liberty	7-2-7	UNKNOWN HEIRS AND ASSIGNS OF ROBIN OWENS	ADDRESS UNKNOWN
Marshall	Liberty	7-2-8	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107

**Offset Operator's within 500'  
Breckenridge S - 22HU**

COUNTY	DISTRICT	TMP	LESSEE	ADDRESS
Marshall	Liberty	7-2-9	TH EXPLORATION LLC	1320 S. University Blvd. Suite 500 Fort Worth, TX 76107

"For those parties identified as Missing or Address Unknown, the following actions were performed in pursuit of locating these individuals : A reasonable review of the records of the clerk of the county commission, the sheriff, the assessor, and the clerk of the circuit court in the county in which the interest is located, and includes unknown heirs, successors and assigns known to be alive; A reasonable inquiry in the vicinity of the owner's last known place of residence; A diligent inquiry into known interest owners in the same tract; and A reasonable review of available Internet resources commonly utilized by the industry."



August 4, 2021

WV Department of Environmental Protection  
Office of Oil & Gas  
601 57<sup>th</sup> Street, SE  
Charleston, WV 25304  
Attention: Charles Brewer

RE: Breckenridge S-22HU

Subject: Road Crossing Letter

Dear Taylor:

Tug Hill Operating, LLC (THO) hereby submits this letter as confirmation that THO has obtained the right to drill, extract and produce the minerals under Marshall County Route 62 and 25/1 in the area reflected on the Breckenridge S-22HU well plat. THO has conducted a full title search in the relevant Court House to confirm its ownership under said County Route and is not currently aware of any recorded document that would suggest an ownership other than THO.

If your office has any questions or concerns regarding the contents of this letter, please do not hesitate to contact me directly at 304-376-0111, or by email at [amorris@tug-hilop.com](mailto:amorris@tug-hilop.com).

Sincerely,

Amy L. Morris  
Permitting Specialist – Appalachia Region

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WV Department of  
Environmental Protection

11/19/2021

**STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE CERTIFICATION**

Date of Notice Certification: 08/05/2021

API No. 47- 051 - \_\_\_\_\_  
Operator's Well No. Breckenridge S-22HU  
Well Pad Name: Breckenridge

**Notice has been given:**

Pursuant to the provisions in West Virginia Code § 22-6A, the Operator has provided the required parties with the Notice Forms listed below for the tract of land as follows:

State: <u>West Virginia</u>	UTM NAD 83 Easting: <u>531,961.98</u>
County: <u>Marshall</u>	Northing: <u>4,408,982.36</u>
District: <u>Cameron</u>	Public Road Access: <u>County Route 62</u>
Quadrangle: <u>Glen Easton 7.5'</u>	Generally used farm name: <u>CNX Land, LLC</u>
Watershed: <u>Grave Creek (HUC 10) &amp; Laurel Run</u>	

Pursuant to West Virginia Code § 22-6A-7(b), every permit application filed under this section shall be on a form as may be prescribed by the secretary, shall be verified and shall contain the following information: (14) A certification from the operator that (i) it has provided the owners of the surface described in subdivisions (1), (2) and (4), subsection (b), section ten of this article, the information required by subsections (b) and (c), section sixteen of this article; (ii) that the requirement was deemed satisfied as a result of giving the surface owner notice of entry to survey pursuant to subsection (a), section ten of this article six-a; or (iii) the notice requirements of subsection (b), section sixteen of this article were waived in writing by the surface owner; and Pursuant to West Virginia Code § 22-6A-11(b), the applicant shall tender proof of and certify to the secretary that the notice requirements of section ten of this article have been completed by the applicant.

<p>Pursuant to West Virginia Code § 22-6A, the Operator has attached proof to this Notice Certification that the Operator has properly served the required parties with the following:</p> <p>*PLEASE CHECK ALL THAT APPLY</p> <p><input type="checkbox"/> 1. NOTICE OF SEISMIC ACTIVITY or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NO SEISMIC ACTIVITY WAS CONDUCTED</p> <p><input checked="" type="checkbox"/> 2. NOTICE OF ENTRY FOR PLAT SURVEY or <input type="checkbox"/> NO PLAT SURVEY WAS CONDUCTED</p> <p><input type="checkbox"/> 3. NOTICE OF INTENT TO DRILL or <input checked="" type="checkbox"/> NOTICE NOT REQUIRED BECAUSE NOTICE OF ENTRY FOR PLAT SURVEY WAS CONDUCTED or</p> <p style="padding-left: 100px;"><input type="checkbox"/> WRITTEN WAIVER BY SURFACE OWNER (PLEASE ATTACH)</p> <p><input checked="" type="checkbox"/> 4. NOTICE OF PLANNED OPERATION</p> <p><input checked="" type="checkbox"/> 5. PUBLIC NOTICE</p> <p><input checked="" type="checkbox"/> 6. NOTICE OF APPLICATION</p>	<p><b>OOG OFFICE USE ONLY</b></p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED/ NOT REQUIRED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p> <p><input type="checkbox"/> RECEIVED</p>
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AUG 13 2021  
WV Department of  
Environmental Protection

**Required Attachments:**

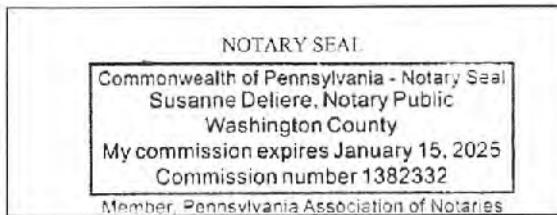
The Operator shall attach to this Notice Certification Form all Notice Forms and Certifications of Notice that have been provided to the required parties and/or any associated written waivers. For the Public Notice, the operator shall attach a copy of the Class II Legal Advertisement with publication date verification or the associated Affidavit of Publication. The attached Notice Forms and Certifications of Notice shall serve as proof that the required parties have been noticed as required under West Virginia Code § 22-6A. Pursuant to West Virginia Code § 22-6A-11(b), the Certification of Notice to the person may be made by affidavit of personal service, the return receipt card or other postal receipt for certified mailing.

WW-6AC  
(1/12)

**Certification of Notice is hereby given:**

THEREFORE, I Amy L. Morris, have read and understand the notice requirements within West Virginia Code § 22-6A. I certify that as required under West Virginia Code § 22-6A, I have served the attached copies of the Notice Forms, identified above, to the required parties through personal service, by registered mail or by any method of delivery that requires a receipt or signature confirmation. I certify under penalty of law that I have personally examined and am familiar with the information submitted in this Notice Certification and all attachments, and that based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Well Operator:	<u>Tug Hill Operating, LLC</u>	Address:	<u>380 Southpointe Boulevard, Plaza II, Suite 200</u>
By:	<u>Amy L. Morris <i>Amy L. Morris</i></u>		<u>Canonsburg, PA 15317</u>
Its:	<u>Permitting Specialist - Appalachia Region</u>	Facsimile:	<u>724-338-2030</u>
Telephone:	<u>724-749-8388</u>	Email:	<u>amorris@tug-hilop.com</u>



Subscribed and sworn before me this 5<sup>th</sup> day of August 2021  
*Susanne Deliere* Notary Public  
 My Commission Expires 1/15/2025

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

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WV Department of  
Environmental Protection

11/19/2021

WW-6A  
(9-13)

API NO. 47- 051 -  
OPERATOR WELL NO. Breckenridge S-22HU  
Well Pad Name: Breckenridge

**STATE OF WEST VIRGINIA  
DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS  
NOTICE OF APPLICATION**

Notice Time Requirement: notice shall be provided no later than the filing date of permit application.

Date of Notice: 8/11/2021 Date Permit Application Filed: 8/12/2021

Notice of:

- PERMIT FOR ANY WELL WORK
- CERTIFICATE OF APPROVAL FOR THE CONSTRUCTION OF AN IMPOUNDMENT OR PIT

Delivery method pursuant to West Virginia Code § 22-6A-10(b)

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to W. Va. Code § 22-6A-10(b) no later than the filing date of the application, the applicant for a permit for any well work or for a certificate of approval for the construction of an impoundment or pit as required by this article shall deliver, by personal service or by registered mail or by any method of delivery that requires a receipt or signature confirmation, copies of the application, the erosion and sediment control plan required by section seven of this article, and the well plat to each of the following persons: (1) The owners of record of the surface of the tract on which the well is or is proposed to be located; (2) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for roads or other land disturbance as described in the erosion and sediment control plan submitted pursuant to subsection (c), section seven of this article; (3) The coal owner, operator or lessee, in the event the tract of land on which the well proposed to be drilled is located [sic] is known to be underlain by one or more coal seams; (4) The owners of record of the surface tract or tracts overlying the oil and gas leasehold being developed by the proposed well work, if the surface tract is to be used for the placement, construction, enlargement, alteration, repair, removal or abandonment of any impoundment or pit as described in section nine of this article; (5) Any surface owner or water purveyor who is known to the applicant to have a water well, spring or water supply source located within one thousand five hundred feet of the center of the well pad which is used to provide water for consumption by humans or domestic animals; and (6) The operator of any natural gas storage field within which the proposed well work activity is to take place. (c)(1) If more than three tenants in common or other co-owners of interests described in subsection (b) of this section hold interests in the lands, the applicant may serve the documents required upon the person described in the records of the sheriff required to be maintained pursuant to section eight, article one, chapter eleven-a of this code. (2) Notwithstanding any provision of this article to the contrary, notice to a lien holder is not notice to a landowner, unless the lien holder is the landowner. W. Va. Code R. § 35-8-5.7.a requires, in part, that the operator shall also provide the Well Site Safety Plan ("WSSP") to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Application Notice  WSSP Notice  E&S Plan Notice  Well Plat Notice is hereby provided to:

SURFACE OWNER(s)  
 Name: CNX Land, LLC (Well Pad and Access Road)  
 Address: 1000 Consol Energy Drive  
Canonsburg, PA 15317  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

COAL OWNER OR LESSEE  
 Name: CNX Land, LLC  
 Address: 1000 Consol Energy Drive  
Canonsburg, PA 15317  
 COAL OPERATOR  
 Name: Marshall County Coal Resources, Inc. Attn: Steve Blair  
 Address: 46226 National Road  
St. Clairsville, OH 43950

SURFACE OWNER(s) (Road and/or Other Disturbance)  
 Name: Kevin R. & Shelly Jo Evans  
 Address: 3820 New Bethel Road  
Cameron, WV 26033  
 Name: David L. & Arianna R. Robinson  
 Address: 3519 New Bethel Road  
Cameron, WV 26033

SURFACE OWNER OF WATER WELL AND/OR WATER PURVEYOR(s)  
 Name: \*see attached  
 Address: \_\_\_\_\_

SURFACE OWNER(s) (Impoundments or Pits)  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

OPERATOR OF ANY NATURAL GAS STORAGE FIELD  
 Name: \_\_\_\_\_  
 Address: \_\_\_\_\_

\*Please attach additional forms if necessary

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Office of Oil and Gas

AUG 13 2021

WV Department of  
Environmental Protection  
11/19/2021

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(b), notice is hereby given that the undersigned well operator has applied for a permit for well work or for a certificate of approval for the construction of an impoundment or pit.

**This Notice Shall Include:**

Pursuant to W. Va. Code § 22-6A-10(b), this notice shall include: (1) copies of the application; (2) the erosion and sediment control plan required by section seven of this article; and (3) the well plat.

Pursuant to W. Va. Code § 22-6A-10(f), this notice shall include: (1) a statement of the time limits for filing written comments; (2) who may file written comments; (3) the name and address of the secretary for the purpose of filing the comments and obtaining additional information; and (4) a statement that the persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

Pursuant to W. Va. Code R. § 35-8-5.7.a, the operator shall provide the Well Site Safety Plan to the surface owner and any water purveyor or surface owner subject to notice and water testing as provided in section 15 of this rule.

Pursuant to W. Va. Code R. § 35-8-15.2.c, this notice shall: (1) contain a statement of the surface owner's and water purveyor's right to request sampling and analysis; (2) advise the surface owner and water purveyor of the rebuttable presumption for contamination or deprivation of a fresh water source or supply; advise the surface owner and water purveyor that refusal to allow the operator to conduct a pre-drilling water well test constitutes a method to rebut the presumption of liability; (3) advise the surface owner and water purveyor of his or her independent right to sample and analyze any water supply at his or her own expense; advise the surface owner and water purveyor whether or not the operator will utilize an independent laboratory to analyze any sample; and (4) advise the surface owner and or water purveyor that he or she can obtain from the Chief a list of water testing laboratories in the subject area capable of and qualified to test water supplies in accordance with standard acceptable methods.

Additional information related to horizontal drilling may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450) or by visiting [www.dep.wv.gov/office-of-oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/office-of-oil-and-gas/pages/default.aspx).

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**Well Location Restrictions**

Pursuant to W. Va. Code § 22-6A-12, Wells may not be drilled within two hundred fifty feet measured horizontally from any existing water well or developed spring used for human or domestic animal consumption. The center of well pads may not be located within six hundred twenty-five feet of an occupied dwelling structure, or a building two thousand five hundred square feet or larger used to house or shelter dairy cattle or poultry husbandry. This limitation is applicable to those wells, developed springs, dwellings or agricultural buildings that existed on the date a notice to the surface owner of planned entry for surveying or staking as provided in section ten of this article or a notice of intent to drill a horizontal well as provided in subsection (b), section sixteen of this article was provided, whichever occurs first, and to any dwelling under construction prior to that date. This limitation may be waived by written consent of the surface owner transmitted to the department and recorded in the real property records maintained by the clerk of the county commission for the county in which such property is located. Furthermore, the well operator may be granted a variance by the secretary from these distance restrictions upon submission of a plan which identifies the sufficient measures, facilities or practices to be employed during well site construction, drilling and operations. The variance, if granted, shall include terms and conditions the department requires to ensure the safety and protection of affected persons and property. The terms and conditions may include insurance, bonding and indemnification, as well as technical requirements. (b) No well pad may be prepared or well drilled within one hundred feet measured horizontally from any perennial stream, natural or artificial lake, pond or reservoir, or a wetland, or within three hundred feet of a naturally reproducing trout stream. No well pad may be located within one thousand feet of a surface or ground water intake of a public water supply. The distance from the public water supply as identified by the department shall be measured as follows: (1) For a surface water intake on a lake or reservoir, the distance shall be measured from the boundary of the lake or reservoir. (2) For a surface water intake on a flowing stream, the distance shall be measured from a semicircular radius extending upstream of the surface water intake. (3) For a groundwater source, the distance shall be measured from the wellhead or spring. The department may, in its discretion, waive these distance restrictions upon submission of a plan identifying sufficient measures, facilities or practices to be employed during well site construction, drilling and operations to protect the waters of the state. A waiver, if granted, shall impose any permit conditions as the secretary considers necessary. (c) Notwithstanding the foregoing provisions of this section, nothing contained in this section prevents an operator from conducting the activities permitted or authorized by a Clean Water Act Section 404 permit or other approval from the United States Army Corps of Engineers within any waters of the state or within the restricted areas referenced in this section. (d) The well location restrictions set forth in this section shall not apply to any well on a multiple well pad if at least one of the wells was permitted prior to the effective date of this article. (e) The secretary shall, by December 31, 2012, report to the Legislature on the noise, light, dust and volatile organic compounds generated by the drilling of horizontal wells as they relate to the well location restrictions regarding occupied dwelling structures pursuant to this section. Upon a finding, if any, by the secretary that the well location restrictions regarding occupied dwelling structures are inadequate or otherwise require alteration to address the items

11/19/2021

examined in the study required by this subsection, the secretary shall have the authority to propose for promulgation legislative rules establishing guidelines and procedures regarding reasonable levels of noise, light, dust and volatile organic compounds relating to drilling horizontal wells, including reasonable means of mitigating such factors, if necessary.

**Water Well Testing:**

Pursuant to West Virginia Code § 22-6A-10(d), notification shall be made, with respect to surface landowners identified in subsection (b) or water purveyors identified in subdivision (5), subsection (b) of this section, of the opportunity for testing their water well. The operator shall provide an analysis to such surface landowner or water purveyor at their request.

**Water Testing Laboratories:**

Pursuant to West Virginia Code § 22-6A-10(i), persons entitled to notice pursuant to subsection (b) of this section may contact the department to ascertain the names and locations of water testing laboratories in the subject area capable and qualified to test water supplies in accordance with standard accepted methods. In compiling that list of names the department shall consult with the state Bureau for Public Health and local health departments. A surface owner and water purveyor has an independent right to sample and analyze any water supply at his or her own expense. The laboratory utilized by the operator shall be approved by the agency as being certified and capable of performing sample analyses in accordance with this section.

**Rebuttable Presumption for Contamination or Deprivation of a Fresh Water Source or Supply:**

W. Va. Code § 22-6A-18 requires that (b) unless rebutted by one of the defenses established in subsection (c) of this section, in any action for contamination or deprivation of a fresh water source or supply within one thousand five hundred feet of the center of the well pad for horizontal well, there is a rebuttable presumption that the drilling and the oil or gas well or either was the proximate cause of the contamination or deprivation of the fresh water source or supply. (c) In order to rebut the presumption of liability established in subsection (b) of this section, the operator must prove by a preponderance of the evidence one of the following defenses: (1) The pollution existed prior to the drilling or alteration activity as determined by a predrilling or prealteration water well test. (2) The landowner or water purveyor refused to allow the operator access to the property to conduct a predrilling or prealteration water well test. (3) The water supply is not within one thousand five hundred feet of the well. (4) The pollution occurred more than six months after completion of drilling or alteration activities. (5) The pollution occurred as the result of some cause other than the drilling or alteration activity. (d) Any operator electing to preserve its defenses under subdivision (1), subsection (c) of this section shall retain the services of an independent certified laboratory to conduct the predrilling or prealteration water well test. A copy of the results of the test shall be submitted to the department and the surface owner or water purveyor in a manner prescribed by the secretary. (e) Any operator shall replace the water supply of an owner of interest in real property who obtains all or part of that owner's supply of water for domestic, agricultural, industrial or other legitimate use from an underground or surface source with a comparable water supply where the secretary determines that the water supply has been affected by contamination, diminution or interruption proximately caused by the oil or gas operation, unless waived in writing by that owner. (f) The secretary may order the operator conducting the oil or gas operation to: (1) Provide an emergency drinking water supply within twenty-four hours; (2) Provide temporary water supply within seventy-two hours; (3) Within thirty days begin activities to establish a permanent water supply or submit a proposal to the secretary outlining the measures and timetables to be used in establishing a permanent supply. The total time in providing a permanent water supply may not exceed two years. If the operator demonstrates that providing a permanent replacement water supply cannot be completed within two years, the secretary may extend the time frame on case-by-case basis; and (4) Pay all reasonable costs incurred by the real property owner in securing a water supply. (g) A person as described in subsection (b) of this section aggrieved under the provisions of subsections (b), (e) or (f) of this section may seek relief in court... (i) Notwithstanding the denial of the operator of responsibility for the damage to the real property owner's water supply or the status of any appeal on determination of liability for the damage to the real property owner's water supply, the operator may not discontinue providing the required water service until authorized to do so by the secretary or a court of competent jurisdiction.

**Written Comment:**

Pursuant to West Virginia Code § 22-6A-11(a), all persons described in subsection (b), section ten of this article may file written comments with the secretary as to the location or construction of the applicant's proposed well work within thirty days after the application is filed with the secretary. All persons described in West Virginia Code § 22-6A-10(b) may file written comments as to the location or construction of the applicant's proposed well work to the Secretary at:

Chief, Office of Oil and Gas  
Department of Environmental Protection  
601 57<sup>th</sup> St. SE  
Charleston, WV 25304  
(304) 926-0450

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Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water. **NOTE: YOU ARE NOT REQUIRED TO FILE ANY COMMENT.**

11/19/2021

**Time Limits and Methods for Filing Comments.**

The law requires these materials to be served on or before the date the operator files its Application. You have **THIRTY (30) DAYS** after the filing date to file your comments. Comments must be filed in person or received in the mail by the Chief's office by the time stated above. You may call the Chief's office to be sure of the date. Check with your postmaster to ensure adequate delivery time or to arrange special expedited handling. If you have been contacted by the well operator and you have signed a "voluntary statement of no objection" to the planned work described in these materials, then the permit may be issued at any time.

Pursuant to West Virginia Code § 22-6A-11(c)(2), Any objections of the affected coal operators and coal seam owners and lessees shall be addressed through the processes and procedures that exist under sections fifteen, seventeen and forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article. The written comments filed by the parties entitled to notice under subdivisions (1), (2), (4), (5) and (6), subsection (b), section ten of this article shall be considered by the secretary in the permit issuance process, but the parties are not entitled to participate in the processes and proceedings that exist under sections fifteen, seventeen or forty, article six of this chapter, as applicable and as incorporated into this article by section five of this article.

**Comment Requirements**

Your comments must be in writing and include your name, address and telephone number, the well operator's name and well number and the approximate location of the proposed well site including district and county from the application. You may add other documents, such as sketches, maps or photographs to support your comments.

Disclaimer: All comments received will be placed on our web site <http://www.dep.wv.gov/oil-and-gas/Horizontal-Permits/Pages/default.aspx> and the applicant will automatically be forwarded an email notice that such comments have been submitted. The applicant will be expected to provide a response to comments submitted by any surface owner, water purveyor or natural gas storage operator noticed within the application.

**Permit Denial or Condition**

The Chief has the power to deny or condition a well work permit. Pursuant to West Virginia Code § 22-6A-8(d), the permit may not be issued or be conditioned, including conditions with respect to the location of the well and access roads prior to issuance if the director determines that:

- (1) The proposed well work will constitute a hazard to the safety of persons;
- (2) The plan for soil erosion and sediment control is not adequate or effective;
- (3) Damage would occur to publicly owned lands or resources; or
- (4) The proposed well work fails to protect fresh water sources or supplies.

A permit may also be denied under West Virginia Code § 22-6A-7(k), the secretary shall deny the issuance of a permit if the secretary determines that the applicant has committed a substantial violation of a previously issued permit for a horizontal well, including the applicable erosion and sediment control plan associated with the previously issued permit, or a substantial violation of one or more of the rules promulgated under this article, and in each instance has failed to abate or seek review of the violation within the time prescribed by the secretary pursuant to the provisions of subdivisions (1) and (2), subsection (a), section five of this article and the rules promulgated hereunder, which time may not be unreasonable.

Pursuant to West Virginia Code § 22-6A-10(g), any person entitled to submit written comments to the secretary pursuant to subsection (a), section eleven of this article, shall also be entitled to receive from the secretary a copy of the permit as issued or a copy of the order modifying or denying the permit if the person requests receipt of them as a part of the written comments submitted concerning the permit application. Such persons may request, at the time of submitting written comments, notice of the permit decision and a list of persons qualified to test water.

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WW-6A  
(8-13)

API NO. 47- 051 -  
OPERATOR WELL NO. Breckenridge S-22HU  
Well Pad Name: Breckenridge

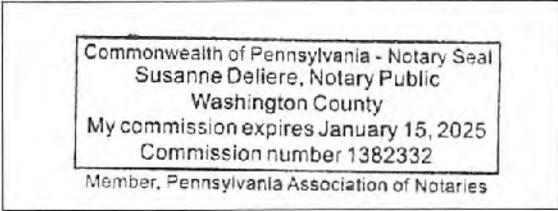
**Notice is hereby given by:**

Well Operator: Tug Hill Operating, LLC  
Telephone: 724-749-8388  
Email: amorris@tug-hillcp.com *anyshelton*

Address: 300 Southpointe Boulevard, Plaza II, Suite 200  
Canonsburg, PA 15317  
Facsimile: 724-338-2030

**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [deprivacyofficer@wv.gov](mailto:deprivacyofficer@wv.gov).



Subscribed and sworn before me this 5<sup>th</sup> day of August 2021  
Susanne Deliere Notary Public  
My Commission Expires 1/15/2025

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**Exhibit WW-6A**

**Supplement Pg. 1A**

Tug Hill Operating, LLC  
380 Southpointe Blvd, Suite 200  
Cannonsburg, PA 15137

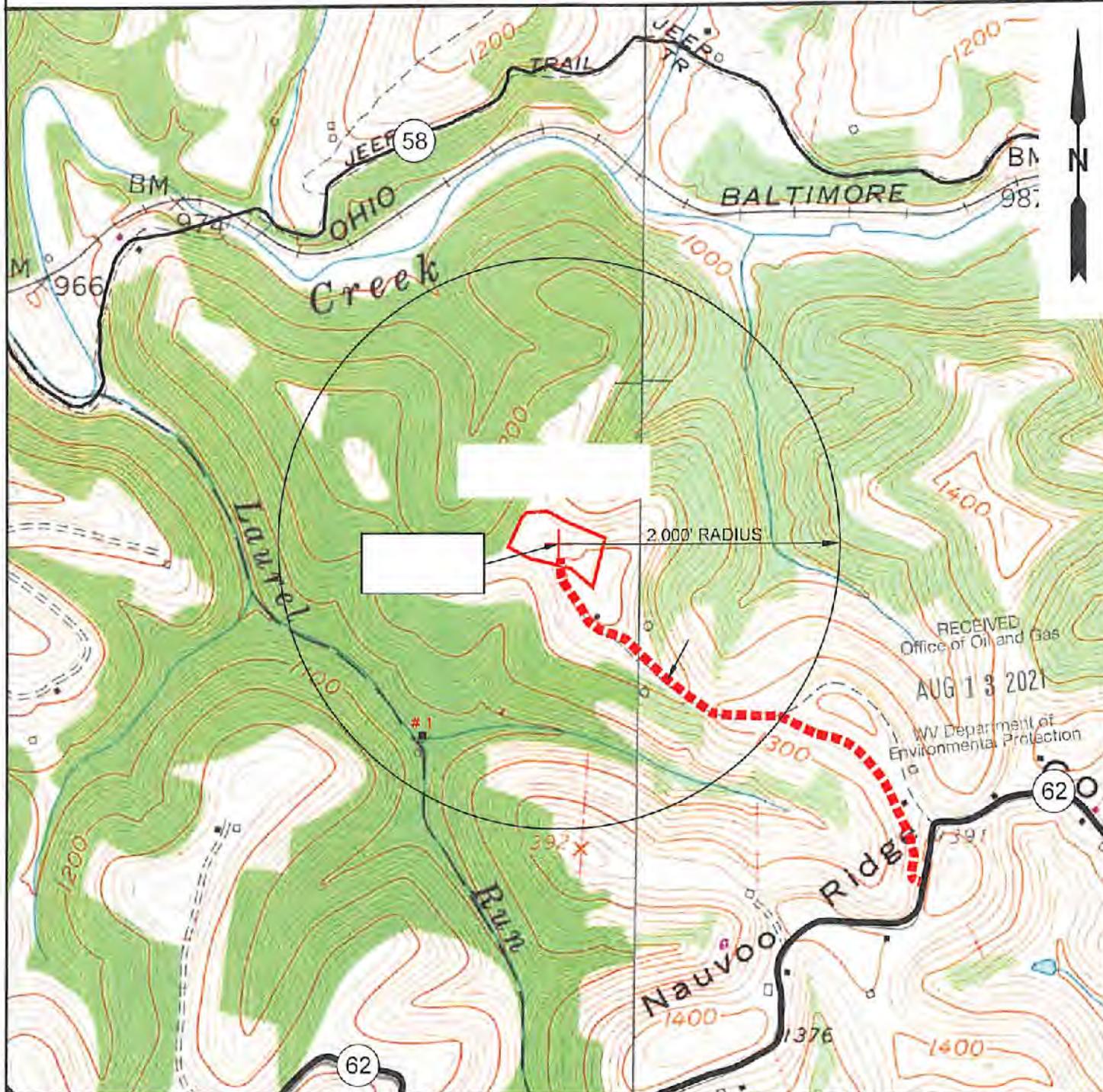
**Residences within Two-Thousand Feet (2,000')**

Well: Breckenridge S – 22HU  
District: Cameron  
State: WV

There is one (1) residence, no business or commercial sites, no churches, no schools or no emergency facilities within two-thousand feet (2,000') of the above referenced well location.

<p><b>Residence (#1)</b> TM 3-19-78 CNX Land, LLC <b>Phone:</b> 724-485-4000 <b>Physical Address:</b> Unknown – Possible Unoccupied Home or Hunting Cabin <b>Tax Address:</b> 1000 Consol Energy DR Canonsburg, PA 15317-6506</p>
---

# PROPOSED BRECKENRIDGE S - 22HU



NOTE: THERE APPEARS TO BE ONE (1) POSSIBLE WATER SOURCE WITHIN 2,000'.



12 Vanhorn Drive | P.O. Box 150 | Glenville, WV 26031 | 304.462.5634  
 1482 Kanawha Boulevard, East | Charleston, WV 25301 | 304.348.5952  
 234 East Beckley Bypass | Beckley, WV 25801 | 304.255.5296  
 slsvv.com

TOPO SECTION:		OPERATOR:	
GLEN EASTON 7.5'		PREPARED FOR: TUG HILL OPERATING, LLC 380 SOUTHPOINTE BLVD SUITE 200 CANONSBURG, PA 15317	
COUNTY	DISTRICT		
MARSHALL	CAMERON		
DRAWN BY	JOB NO.	DATE	SCALE
K.G.M.	9026	04/08/2021	1" = 1000'



**TUG HILL**  
OPERATING

11/19/2021

**STATE OF WEST VIRGINIA**  
**DEPARTMENT OF ENVIRONMENTAL PROTECTION, OFFICE OF OIL AND GAS**  
**NOTICE OF ENTRY FOR PLAT SURVEY**

**Notice Time Requirement:** Notice shall be provided at least SEVEN (7) days but no more than FORTY-FIVE (45) days prior to entry

**Date of Notice:** 12/1/2020      **Date of Planned Entry:** 12/7/2020

**Delivery method pursuant to West Virginia Code § 22-6A-10a**

- PERSONAL SERVICE
- REGISTERED MAIL
- METHOD OF DELIVERY THAT REQUIRES A RECEIPT OR SIGNATURE CONFIRMATION

Pursuant to West Virginia Code § 22-6A-10(a), Prior to filing a permit application, the operator shall provide notice of planned entry on to the surface tract to conduct any plat surveys required pursuant to this article. Such notice shall be provided at least seven days but no more than forty-five days prior to such entry to: (1) The surface owner of such tract; (2) to any owner or lessee of coal seams beneath such tract that has filed a declaration pursuant to section thirty-six, article six, chapter twenty-two of this code; and (3) any owner of minerals underlying such tract in the county tax records. The notice shall include a statement that copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, which statement shall include contact information, including the address for a web page on the Secretary's web site, to enable the surface owner to obtain copies from the secretary.

**Notice is hereby provided to:**

SURFACE OWNER(s)

Name: CNX Land, LLC (Well Pad and Access Road)

Address: 1000 Consol Energy Drive  
Canonsburg, PA 15317

Name: Kevin R & Shelly Jo Evans (Access Road)

Address: 3820 New Bathal Road  
Cameron, WV 26033

Name: David L. & Arianna R. Robinson

Address: 3518 New Bathal Road  
Cameron, WV 26033

COAL OWNER OR LESSEE

Name: CNX Land, LLC

Address: 1000 Consol Energy Drive  
Canonsburg, PA 15317

MINERAL OWNER(s)

Name: Onward E. Burge

Address: RD 3 Box 35  
Cameron, WV 26033      **\*\*See attached list**

*\*please attach additional forms if necessary*

**Notice is hereby given:**

Pursuant to West Virginia Code § 22-6A-10(a), notice is hereby given that the undersigned well operator is planning entry to conduct a plat survey on the tract of land as follows:

State: <u>West Virginia</u>	Approx. Latitude & Longitude: <u>39.83027651; -80.62685846</u>
County: <u>Marshall</u>	Public Road Access: <u>County Route 62</u>
District: <u>Cameron</u>	Watershed: <u>Grave Creek (HUC 10) and Laurel Run</u>
Quadrangle: <u>Glen Easton 7.5'</u>	Generally used farm name: <u>CNX Land, LLC</u>

Copies of the state Erosion and Sediment Control Manual and the statutes and rules related to oil and gas exploration and production may be obtained from the Secretary, at the WV Department of Environmental Protection headquarters, located at 601 57<sup>th</sup> Street, SE, Charleston, WV 25304 (304-926-0450). Copies of such documents or additional information related to horizontal drilling may be obtained from the Secretary by visiting [www.dep.wv.gov/oil-and-gas/pages/default.aspx](http://www.dep.wv.gov/oil-and-gas/pages/default.aspx).

**Notice is hereby given by:**

Well Operator: Tug Hill Operating, LLC

Telephone: 724-749-8388

Email: amorris@tug-hill-op.com

Address: 380 Southpointe Boulevard, Plaza II, Suite 200  
Canonsburg, PA 15317

Facsimile: 724-338-2020

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**Oil and Gas Privacy Notice:**

The Office of Oil and Gas processes your personal information, such as name, address and telephone number, as part of our regulatory duties. Your personal information may be disclosed to other State agencies or third parties in the normal course of business or as needed to comply with statutory or regulatory requirements, including Freedom of Information Act requests. Our office will appropriately secure your personal information. If you have any questions about our use or your personal information, please contact DEP's Chief Privacy Officer at [depprivacyofficer@wv.gov](mailto:depprivacyofficer@wv.gov).

11/19/2021

**WW-6A3 Attachment  
Breckenridge Well Pad**

Jan Marie Crego 2110 Plum Street Parkersburg, WV 26101	Nina K. Fletcher 45 Briarwood Drive Wheeling, WV 26003
Leon McCard 25 Honour Cir NW Atlanta, GA 30305	Gary Briggs 1508 26th Street Cody, WY 82414
Jeff and Connie Briggs 803 Meadow Lane Ave Apt 5 Cody, WY 42414	Roger L. Briggs 908 Amble Court Harrington, DE 19952
Thomas A. Briggs 996 Tunnel Hill Road Cameron, WV 26033	Julia A. Briggs 8154 W. Ohio State Lane NW Lancaster, OH 43130
Deena J. Palomo 20 Maxwell Street, Apartment 4 Hebron, IN 46341	Jerrilyn Litts 5582 Fairview Street Stevensville, MI 49127
Douglas Briggs PO Box 1416 Gillette, WY 82717	Gerri A Bannister 508 Richards Ave Gillette, WY 82717
John Briggs PO Box 2008 Richland, WA 99352	Noble Marcellus LP 15601 North Dallas Parkway, Suite 900 Addison, TX 75001
Meridius Ventures LLC PO Box 1099 Ripley, WV 25271	Hasan's Ventures LLC PO Box 1099 Ripley, WV 25271
Bounty Minerals LLC 777 Main Street, Suite 3400 Fort Worth, TX 76102	Goshorn Ridge, LLC 112 Algonquin Trace Wheeling, WV 26003

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**Additional Notice for WW-6A5  
Breckenridge Pad**

David L. & Arianne R. Robinson  
3518 New Bethel Road  
Cameron, WV 26033

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WEST VIRGINIA DEPARTMENT OF TRANSPORTATION  
**Division of Highways**

1900 Kanawha Boulevard East • Building Five • Room 110  
 Charleston, West Virginia 25305-0430 • (304) 558-3505

Byrd E. White, III  
 Secretary of Transportation

January 8, 2021

Jimmy Wriston, P. E.  
 Deputy Secretary/  
 Acting Commissioner

James A. Martin, Chief  
 Office of Oil and Gas  
 Department of Environmental Protection  
 601 57<sup>th</sup> Street, SE  
 Charleston, WV 25304

Subject: DOH Permit for the Breckenridge Pad, Marshall County  
 Breckenridge S-22HU Well site

Dear Mr. Martin,

This well site will be accessed from a DOH permit #06-2020-0398 issued to Tug Hill Operating for access to the State Road for a well site located off Marshall County Route 62 SLS MP 3.81.

This operator is in compliance with §22-6A-20 of the WV Code. Operator has signed a DISTRICT WIDE OIL AND GAS ROAD MAINTENANCE BONDING AGREEMENT and provided the required Bond. This operator is currently in compliance with the DOH OIL AND GAS POLICY dated October 1, 2018.

Very Truly Yours,

Gary K. Clayton, P.E.  
 Regional Maintenance Engineer  
 Central Office O&G Coordinator

Cc: Amy Morris  
 Tug Hill Operating  
 CH, OM, D-6  
 File

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**PLANNED ADDITIVES TO BE USED IN FRACTURING OR STIMULATION**

**Breckenridge Wells**

<b>PRODUCT NAME:</b>	<b>CHEMICAL DESCRIPTION:</b>	<b>PRODUCT USE:</b>	<b>HAZARDOUS COMPONENT:</b>
GBW-20C	Hemicellulase Breaker	Breaker - Water	None
ALPHA 1427		Biocide	Glutaraldehyde – CAS#000111-30-8 Quaternary ammonium chloride CAS# 007173-51-5 Alky dimethyl benzyl ammonium Chloride (C12-16) – CAS#068424-85-1 Ethanol – CAS# 000064-17-5 Water – CAS# 007732-18-5
FRAC SAND	Silica Sand (various Mesh sizes)	Proppant	Crystalline silica (quartz) CAS# 14808-60-7
S-8C, Sand	Silica Sand (100 mesh)	Sand	Silica – CAS# 14808-60-7
GW-3LDF		Gellant - Water	Petroleum Distillate Blend – Proprietary, (Not Associated with Diesel Fuel) Guar gum – CAS# 009000-30-0
FRW-18		Friction Reducer	Hydrotreated light distillate CAS# 064742-47-8
Scaletrol		Scale Inhibitor	Ethylene glycol – CAS# 000107-21-1 Diethylene glycol – CAS# 000111-46-6

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